

**ENVIRONMENTAL ASSESSMENT
LIVESTOCK GRAZING AUTHORIZATION**

EA Number: CA-650-2004-38

Allotment Name: Rudnick Common Allotment

**Bureau of Land Management
Ridgecrest Field Office
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TABLE OF CONTENTS

1. CHAPTER 1	3
A. INTRODUCTION	3
B. NEED	4
C. PLAN CONFORMANCE	4
2. CHAPTER 2	9
A. CURRENT MANAGEMENT	9
B. PROPOSED ACTION	12
C. NO GRAZING ALTERNATIVE	18
3. CHAPTER 3 – ENVIRONMENTAL ANALYSIS	18
A. AIR QUALITY	18
B. AREA OF CRITICAL ENVIRONMENTAL CONCERN	20
C. BIOLOGICAL SOIL CRUSTS	22
D. CULTURAL RESOURCES	24
E. ENVIRONMENTAL JUSTICE	29
F. FARMLANDS, PRIME OR UNIQUE	30
G. FLOOD PLAINS	31
H. INVASIVE, NON-NATIVE SPECIES	31
I. NATIVE AMERICAN CONCERNS	34
J. RECREATION	35
K. SOCIAL & ECONOMIC VALUES	36
L. SOILS	37
M. SPECIAL STATUS PLANTS SPECIES	40
N. WASTE, HAZARDOUS OR SOLID	42
O. WATER QUALITY	42
P. WETLANDS/ RIPARIAN ZONES	47
Q. WILD AND SCENIC RIVERS	52
R. WILDERNESS	53
S. WILD HORSES AND BURROS	56
T. WILDLIFE	56
U. VEGETATION	68
4. CHAPTER 4 – PARTICIPATING STAFF	75
5. APPENDIX 1 – ALLOTMENT MAP	77
6. APPENDIX 2 - PROPER USE FACTORS	79
7. APPENDIX 3 – RANGE IMPROVEMENTS	81
8. APPENDIX 4 – WILDLIFE TABLES	88
9. APPENDIX 5 – LIVESTOCK GRAZING AMENDMENT	96
10. REFERENCES	101

CHAPTER 1

A. INTRODUCTION

Two grazing permits for cattle operations on the Rudnick Common Allotment expired at the end of the 1998 grazing year (2/28/1999) and 1999 grazing year (2/28/00). These two grazing permits were renewed under the authority of Public Law 106-113. The duration of the grazing permits renewal was 10 years based on factors that included rangeland health condition. Grazing permits contained the same terms and conditions as the expiring grazing permits. Public Law 106-113 required compliance with all applicable laws and regulations, which include the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA). Following the analysis of environmental impacts these grazing leases may be canceled, suspended or modified, in whole or in part, to meet the requirements of such applicable laws and regulations.

The Washington Office Instruction Memorandum 2003-071 requires that all grazing permits and leases that expired in 1999 and 2000 be “fully processed” by the end of Fiscal Year 2004 (9/30/04). The term “fully processed” permit/lease refers to the completion of an adequate environmental analysis and issuance of a proposed grazing decision in accordance with 43 CFR 4160, and appropriate consultation in accordance with the ESA.

The Bureau of Land Management (BLM) is proposing to issue two, 10 year term permits on the Rudnick Common allotment to authorize livestock grazing. The Rudnick Common allotment encompasses approximately 163,842 acres public lands and approximately 77,944 acres private lands. The allotment is located in Kern County, California.

The Rudnick Common Allotment is floristically diverse because it is at the juncture of four floristic provinces. The floristic provinces are the Western Mojave Desert, the Northern Mojave Desert, the Southern Sierra, and the San Joaquin Valley. Both the ephemeral and perennial species provide significant amounts of forage and the allotment is classified as an ephemeral/perennial allotment that is available for both sheep and cattle grazing. While approximately 20 plant communities have been identified in the allotment there four that cover the bulk of the grazing areas. These are Creosote Bush/Bursage association, Blackbrush, Joshua Tree forest, and Pinyon/Juniper woodland. Amongst the most palatable forage species are: the shrubs, *Atriplex canescens* (Fourwing Saltbush), *Acamptopappus sphaerocephalus* (Goldenhead), *Ephedra nevadensis* (Mormon Tea), *Eriogonum sp.* (Buckwheat species), *Kraschennikovia lanata* (Winterfat), and *Graya spinosa* (Spiney Hopsage); the grasses, *Oryzopsis hymenoides* (Indian Rice Grass), *Sitanion hystrix* (Bottlebrush or Squirreltail), and *Stipa speciosa* (California Needlegrass); and the annual, *Erodium cicutarium* (Filaree or Heron’s-bill).

Topographically the Rudnick Common Allotment ranges in elevation from 3,200 feet on the eastern edge to 4,000 feet at the base of the Sierras, and reaches 6,500 and 7,000 feet in the Sierras and the Piute Mountains. The Kelso Valley in the center of the allotment is at approximately 4,500 feet. Water for grazing is provided through natural springs with improvements, wells, and siphoning water from the L.A. Aqueduct.

B. NEED FOR THE PROPOSED ACTION

The proposed action is needed to authorize grazing in accordance with 43 CFR 4100 and consistent with the provisions of the *Taylor Grazing Act*, *Public Rangelands Improvement Act*, and *Federal Land Policy and Management Act*. Action may be required to maintain or improve resource conditions including rangeland health. The existing permits are valid for ten year terms that end 2/28/2010 and are subject to the terms and conditions therein. The terms and conditions of the permits may be modified in accordance with the findings of this environmental assessment.

C. CONFORMANCE:

RELATIONSHIP TO STATUTES, REGULATIONS, AND PLANS

The proposed action is subject to the California Desert Conservation Area Plan (CDCA Plan) 1980 as Amended (August 1999). The proposed action has been determined to be in conformance with this plan as required by regulation (43 CFR §1610.5-3(a)). The proposed action would occur in areas identified for livestock grazing as indicated in the Livestock Grazing Element in the CDCA Plan 1980 (1999), pages 56 to 68. The proposed action is consistent with the land use decisions, and goals and objectives listed in the CDCA Plan.

The allotment does (does not) meet the Secretary of Interior Approved Rangeland Health Standards as follows:

Rangeland Health Standard	Meets Standard	Does Not Meet Standard	Impacts from Livestock Yes or No	Remarks
Soil Permeability	met			
Riparian/Wetland		Not met	Yes	Trampling damage and over consumption compounded by salt cedar and OHV use
Stream Morphology		Not met	Yes	Trampling of stream banks leading to widening of channel
Native Species		Not met	No	

September 20, 2004, determination finalized.

Endangered Species

This allotment is within the range of federally listed threatened or endangered species. Pursuant to Section 7 of the Endangered Species Act, formal consultation with the Fish and Wildlife Service (FWS) is required on all allotments for which livestock grazing may affect listed species. The stipulations of any grazing permit may need to be modified to conform to the terms and conditions specified in a FWS biological opinion to minimize take of listed animal species. In addition, the terms

and conditions of any grazing permit may also need to be modified to conform to decisions made to achieve recovery plan objectives as determined through subsequent land use plan amendments or revisions. For instance, Plan Amendment 19 of the California Desert Conservation Area Plan categorizes the land on the basis of suitability as Desert Tortoise habitat. The Western Mojave Habitat Conservation Plan is an amendment to the CDCA and is currently being prepared.

The allotment also provides habitat for State listed fish, wildlife, and plant species. According to the MOU between BLM and CDFG we agree: "to notify the Department of all projects involving impacts to, or manipulation of, State-listed rare (threatened) and endangered fish, wildlife and plants and to obtain State recommendations of the project-specific management of such populations."

Special Status Plant Species

It is BLM's policy to carry out management, consistent with the principals of multiple use, for the conservation of Special Status Plant Species and their habitats and will ensure that actions authorized, funded, or carried out do not contribute to the need to federally list any of the species as threatened or endangered.

Cultural Resources

California BLM has explicit responsibility to manage cultural resources on public lands under the National Historic Preservation Act (NHPA; P.L. 89-665); Federal Land Policy and Management Act (FLPMA; P.L. 94-579); Archaeological Resources Protection Act (ARPA; P.L. 96-95); Native American Graves Protection and Repatriation Act (NAGPRA; P.L. 101-601); American Indian Religious Freedom Act (AIRFA; P.L. 95-431); and other law and implementing regulation. General compliance with these requirements is outlined in the Programmatic Agreement Among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act (National PA) and the Protocol Agreement between California BLM and the California State Historic Preservation Officer Regarding the Manner in which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act (Protocol Agreement).

All grazing permits that cover cattle grazing will be subject to compliance with Section 106 of the National Historic Preservation Act following procedures defined in an amendment to the Protocol Agreement (Livestock Grazing Amendment or Amendment). Background site record and literature review will be conducted. Inventory will focus on the intersection between areas that are known or suspected to contain significant cultural resources and areas in which cattle congregate and therefore have the greatest potential to affect cultural resources. An inventory design following the terms of the Protocol Range Amendment will be written for each allotment. Inventory will be carried out following that design. Results of inventory and actions taken to avoid adverse effects to cultural resources will be reported annually to the BLM California State Office and the State of California Office of Historic Preservation. Compliance with Section 106 requirements must be completed within 10 years. Federally recognized and State recognized Native American tribal groups and individuals are being consulted on issues of concern to them, such as the presence of sacred, traditional use, or other culturally important areas or features. The results of this analysis will be used to modify grazing permits. Stipulations on each grazing permit will be modified to reflect compliance with the Livestock Grazing Amendment. All cultural resources will be subject to review and evaluation to identify effects resulting from grazing and related activities. All cultural resources will

be afforded protection or mitigation consistent with law, policy, and the Protocol Livestock Grazing Amendment.

Wilderness

The Bright Star and Kiavah Wilderness areas are found in the Rudnick Common Allotment. Grazing activities currently occur in wilderness. For the purpose of this analysis, the proposed action contains no impacts that are expected to occur above those impacts already occurring under current grazing management.

The proposed action is consistent with the California Desert Protection Act of 1994: “CDPA (P. L. 104-433, Section 103.(c)): “Livestock.—Within the wilderness areas designated under Section 102, the grazing of livestock, where established prior to the date of enactment of this Act, shall be permitted to continue subject to such reasonable regulations, policies, and practices as the Secretary deems necessary, as long as such regulations, policies, and practices fully conform with and implement the intent of Congress regarding grazing in such areas as such intent is expressed in the Wilderness Act and section 101(f) of Public Law 101-628.”

In general, the wilderness act prohibits roads, motorized equipment, mechanical transport, landing of aircraft, and placement of new structures and installations. The wilderness areas are managed primarily to preserve natural features. For allotments containing wilderness areas, allotments are required to be managed under the provisions of the 1964 Wilderness Act and enabling legislation for the wilderness area.

Congress provided additional guidance for managing livestock within wilderness areas through the Congressional grazing guidelines found in the 1980 Colorado wilderness legislation. Regulations to manage livestock in wilderness is found in 43 CFR 6300. For allotments within Wilderness Study Areas, they shall be managed consistent with the direction found in the Interim Policy Management Handbook 8550.

Water Quality

The federal Clean Water Act (CWA) delegates to the states the authority to regulate certain activities that may affect water quality. The California State Porter-Cologne Act (CA Water Code ' 13140-13143) establishes the State Water Quality Control Board and nine Regional Water Quality Control Boards (RWQCB). It directed the preparation of Basin Plans and provided guidance on factors to include in the plans. It also implemented the Federal Clean Water Act. The project is mostly within the Lahontan Region and under the jurisdiction of the Lahontan RWQCB. A small portion of the allotment along Kelso Creek is in the Central Valley RWQCB area of jurisdiction. The RWQCBs have prepared Basin Plans which includes beneficial uses and water quality standards

Activities related to grazing livestock may degrade the quality of water for natural occurring water sources such as springs or seeps. Any changes in grazing management or soil (surface) disturbing actions would be reviewed further for potential impacts to water quality. Best management practices would be employed to mitigate or avoid these potential impacts.

All allotments with watersheds are governed by basin plans subject to California's or Nevada's clean water acts. Executive Order #12088 directs federal agencies to comply with state administrative procedures. Recently, Standards and Guidelines reiterated the intent of the Federal Clean Water Act (CWA) and States' water quality plans. An MOU (BLM Manual Supplement 6521.11) with the

California Department of Fish and Game describes how BLM and DF&G will coordinate where activities could affect aquatic or riparian habitat. The Unified Federal Policy to insure a Watershed Approach in Federal Land and Resource Management (UFP) requires 1) all plans and activity management be conducted on a watershed basis, 2) that all land owners/managers within a watershed be solicited for participation in the planning and management of the watershed, 3) that citizens and officials are better informed of planning and management, 4) that best science is used. The EA should analyze grazing within the Watershed Concept described in the UFP. Where there is a threat to water quality or where water quality does not meet state standards coordination must occur with the regional water quality control board(s) and where aquatic or riparian habitat may be impacted CDF&G coordination must occur. All allotments that contain any water bodies (streams, lakes, springs, etc.) must have adopted Best Management Practices (BMP) for all activities associated with livestock management that could affect water quality.

Air Quality

The proposed action falls within the jurisdiction of the Kern County Air Pollution Control District (KCAPCD). The KCAPCD has state air quality jurisdiction over the area including the Rudnick Common Allotment. The air district has rules which apply to most emissions including fugitive dust emissions.

Federal Conformity: Projects within federal air quality nonattainment areas have an additional burden in that federal agencies must make a determination that its actions conform to the State Implementation Plans (SIP) before the action is taken (Section 176 (c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 et seq.) and regulations under 40 CFR part 93 subpart W). These authorities address the conformity of general federal actions to SIPs. These authorities state, "No department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan". Regulations at 40 CFR Part 93.153 Applicability includes a number of exceptions to the requirements of the conformity rules including the following:
“(c) The requirements of this subpart shall not apply to the following Federal actions:
(iii) Continuing and recurring activities such as permit renewals where activities will be similar in scope and operation to activities currently being conducted.”

Regulations: Management of habitat for the tortoise and over 100 other sensitive species on public lands is being addressed, For livestock grazing purposes, this proposal is subject to BLM regulations at 43 CFR 4100 (grazing regulations).

Plans: West Mojave Plan (Proposed Habitat Conservation Plan/CDCA Plan amendment): BLM, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), county and city governments, various interest groups, the U.S. military, and a number of public lands stakeholders currently are developing this plan. Upon completion, it is intended to amend the CDCA Plan. The West Mojave Plan is a local bio-regional planning effort addressing State and federally-listed species, specifically the desert tortoise. BLM issued the West Mojave Plan Draft Environmental Impact Statement (WMP-DEIS) in May 2003.

Management of habitat for the tortoise and over 100 other sensitive species on public lands is being addressed, including implementation of recovery plan actions developed for the tortoise. The management of livestock grazing on public and interspersed private lands is an integral component of

this plan. Actions evaluated in this assessment may subsequently be adopted for use in other livestock allotments or changed to reflect objectives or findings identified in the West Mojave Plan.

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

A. CURRENT MANAGEMENT

The Current Management Alternative consists of authorizing cattle grazing on this allotment, under two grazing permits. Each permit would be for a term of ten years. These grazing permits would include the terms and conditions stated in the 1992 Biological Evaluation of Cattle Grazing Along the Eastern Slope of the Sierra Nevada Mountains in the California Desert District (CA-063.50, 1-6-92-F-55) and extended in August 2000. Also, the terms and conditions of the Biological Opinion attached to the WEMO Plan Amendment of the CDCA Plan for cattle grazing have been incorporated. In addition, the current season of use and permitted use, including management actions and stipulations stated in an approved AMP, if applicable, or stipulations directed by existing decision or through an existing agreement would also be included in these grazing permits. Table 1. outlines the numbers of cattle, season of use, and numbers of AUMs as they appear on the ranch operators' permits.

1. Livestock Numbers and Season of Use

Table 1.

Allotment	Number	Kind	Class	From	To	AUMs
Rudnick Common (Oynx Ranch)	739	Cattle	Cow/calf	3/1	8/31	3398
	738	Cattle	Cow/calf	9/1	2/28	3338
(Onyx Mtn. Cattle Co.)	14	Cattle	Cow/calf	3/1	7/30	70
	18	Cattle	Cow/calf	3/1	7/30	91

2. Livestock Management

The Rudnick Common is divided into 12 pastures. Two of the pastures (Cane Canyon and Pinyon Well) are designated for use by the Onyx Mountain Cattle Company. The other 10 pastures are designated for use by the Rudnick Estate Trust (Onyx Ranch). The Scodie Allotment is a small Forest Service allotment used as a pasture by the Rudnick Estate Trust. Sheep Troughs pasture is a year round pasture subleased by the Trust to an outside operator. The remaining eight pastures used by the Trust are used in a rotational grazing pattern. These pastures are Jawbone, Dove Spring (aka, San Antonio), Kelso Valley, Kelso Creek, Bird Springs (aka, Dove Spring), Canyons, Aqueduct, and Rocky Point (aka, Brown Flat). Jawbone/Dove Spring pastures, and Bird Springs/Kelso Creek pastures are used as paired pastures because natural barriers are insufficient to contain cattle in one pasture and there are no fences. Aqueduct pasture has an unreliable source of water and can only be used periodically. Rocky Point pasture is a small pasture and is used as an adjunct to the other pastures and the Jawbone/Dove Spring pasture has had limited seasons of use due to seasonal closures to protect desert tortoise habitat. This leaves essentially five pastures; (See Map, Appendix 1)

Jawbone/Dove Spring, Bird Springs/Kelso Creek, Kelso Valley, Aqueduct, and Canyons, to fit into a rotational grazing system for the bulk of the cattle herd given the limitations mentioned above.

Current management practice is a rotational grazing system with all cattle being in one pasture at a time for two to four months. This means that three to four pastures are used yearly and that all five pastures are used before the rotation returns to the first pasture used in the cycle. The advantage of this system is that: (1) each pasture gets more than one year's rest before it is used again, and (2) the cattle never return to the same pasture in the same season of the year for two years in a row. For the reasons mentioned above this rotation system has not always been strictly adhered too. It is also important to note that the rotational system has not been adhered to because some range improvements called for in the Allotment Management Plan of 1985 have never been implemented and because some of the range improvements that were completed have fallen into disuse because of vandalism or neglect. Furthermore, new range improvements are needed to assure better distribution of cattle within pastures (See Appendix 2).

According the Allotment Management Plan (AMP) signed in 1985 these five pastures have a perennial carrying capacity of 11,300 AUMs. The permit for the Rudnick Estate Trust calls for the allocation of 7,016 AUMs (Scodie Mtn. included) of perennial forage annually for all pastures. The historical allocation of AUMs called for at the time FLPMA became law and reiterated in the CDCA Plan is 26,210 AUMs. While the Rudnick permit allows 7,016 AUMs use each year 18,867 AUMs are held in suspension. Ephemeral grazing is authorized up to the number of AUMs held in suspension. From the 1999/2000 grazing year through the 2003/2004 grazing year the Trust has used between 2100 and 2900 AUMs annually, including those AUMs allocated to the use of Sheep Troughs, Rocky Point and Scodie pastures. From 1992 through the 1998/1999 grazing year the AUMs used by the Trust were below the number allocated to them except for one year, 1995/1996, when 13,687 AUMs were allocated to it. Of these 13,687 AUMs, 4498 AUMs were allocated as ephemeral AUMs. Therefore, the Trust has used less than 2,900 AUMs in seven of the past 12 years, less than 6,700 AUMs in 11 of the past 12 years, and been allocated additional AUMs above its permitted use in one of the past 12 years.

Table 2.

Allotment	No. of Years	Range of No. of Cattle on Allotment	Average No. of Cattle/Year	Range of No. of AUMs/Year	Average No. of AUMs/Year
Onyx Ranch (Trustees)	12	24-3883	353	844-11,233	4219
Onyx Mtn. Cattle Co.	4	1-69	57	132-185	152

The Onyx Mountain Cattle Company has a preference for 70 AUMs acquired from the old Beverly Robinson ranch and has applied for another 91 AUMs which was formerly the preference of the now defunct Kelso Cattle Company. This would total 161 AUMs per year, if approved. The season of use is the spring and early summer (March-July) each year. In 2001 they used 141 AUMs, in 2002 they used 132 AUMs, and in 2003, a wet year they were allocated 24 extra AUMs for a total of 185 AUMs. These AUMs were used in Pinyon Well and Cane Canyon pastures.

Since 1992 use in terms of AUMs has ranged from 844 to 13,687 AUMs with an average of 4423 AUMs. Intense use or heavy cattle activity has fairly consistently taken place in riparian corridors and high valleys while broader plains areas have seen more moderate usage because of the ability of the cattle to disperse. Thus, in Canyons Pasture, the canyon bottoms in Cow Heaven, Sage, and Horse Canyons have always sustained heavy activity. In Aqueduct Pasture the areas where water is siphoned from the aqueduct and where Highway Well once existed have received the heaviest use. In Bird Springs Pasture the gulch where BLM designated route SC120 leads up to Bird Springs and then broadens as it goes up to Bird Springs Pass receives consistently heavy cattle activity. Bird Springs Pasture also sustains heavy cattle use around Dove Spring and Virginia Tank. Dove Spring Pasture receives heavy cattle activity on the west side of Dove Spring and historically up to Dove Spring Well, however, the present inactivity of the well as diminished recent cattle activity there. Dove Springs Open Area receives heavy activity from OHV use. San Antonio Tank also receives heavy cattle use and Bishop's Claim Well historically received heavy cattle activity. In Kelso Valley the areas around Whitney Well and Road Well receive heavy activity as does the private property. Butterbrecht Valley is an area of moderate cattle activity. Kelso Creek receives heavy use at Frog Spring, Shoemaker Spring Trough, Williams Spring, and Willow Spring, and moderate use along Frog Creek. Tunnel Spring is on private property but receives heavy activity. Jawbone Pasture sustains heavy activity from in the canyons leading off from Jawbone Canyon Road due to OHV use. Sheep Troughs Pasture sustains moderate to heavy cattle activity year around at the springs along the course of Cottonwood Creek and along tributaries to the southwest. However, the vast majority of this pasture is on private land. (See Map, Appendix 1)

On the northwest side of the allotment fewer cattle are grazed but heavy activity patterns are present at Pinyon Well, Cane Canyon Well and Nicholl Spring. (See Map, Appendix 1)

The BLM entered into a settlement agreement with The Center for Biological Diversity in December 2000. Within that settlement the BLM agreed to implement seasonal closures of cattle grazing in Jawbone and Dove Spring pastures. Once the WEMO Plan Amendment is signed the seasonal closures will terminate. The BLM has determined that the seasonal closures in these areas have no significant benefit to the existing desert tortoise habitat.

3. Range Improvements

Under current management, the range improvements listed in Appendix 3 would be maintained or upgraded, and additional new improvements are proposed, to facilitate the distribution and control of cattle.

4. Measures to Maintain or Achieve Standards (Terms and Conditions of Permit)

None.

5. Monitoring

The rangeland monitoring of this allotment is currently in three categories. These categories are 1) short term monitoring, 2) long term monitoring, and 3) interpreting the indicators of rangeland health through an allotment assessment.

The use of short term monitoring is a tool to gauge the cause and effect of the current authorization. This type of monitoring consists of actual use, current climatic conditions and the collection of utilization data. This type of data would be collected on a yearly basis at minimum. The collection of

utilization data should be carried out in two situations: (1) during the time that cattle are grazing to be sure they have not exceeded the thresholds (Proper Use Factors (PUFs)) of key forage species and/or (2) within two weeks of the time grazing has ceased on the pasture or allotment. (See table of Proper Use Factors (PUFs) for key forage species in the Ridgecrest Field Office Area, Appendix 3.)

The collection of long term monitoring data typically occurs every two to three years. The collection of trend data, both photo and measured trend is used to determine long term cause and effect of long term grazing strategies. The collection of measured trend has typically been accomplished through the collection of frequency data at key areas. This collection of this type of data has not been consistent and has not occurred in several years. A renewed effort to collect this type of data would be an important goal during this 10 year lease cycle.

The collection of indicators of rangeland health information is a qualitative method that requires the formation of an interdisciplinary team that makes observations of various indicators to determine the health of rangelands and the achievement of fallback or regional standards of rangeland health. This process is also considered a long term, and typically occurs every five to six years

B. PROPOSED ACTION

This alternative was developed after a review of resource issues and conditions found on the Rudnick Common allotment. Monitoring requirements, mitigation measures, and permit terms and conditions developed in the resolution of issues are incorporated into this alternative to minimize potential impacts to resources while continuing to provide forage for livestock grazing. This alternative prescribes all measures that will be taken in addition to current management practices described above.

As a result of a Rangeland Health Assessment and the Determination for Rudnick Common Allotment it was concluded that certain riparian areas were not meeting rangeland health standards. This proposed action is designed to meet those standards by incorporating recommendations made in Recommended Prescribed Actions in Section 5 of the Rudnick Common Allotment Rangeland Health Determination and by incorporating the recommendations made in Chapter 3 of this environmental assessment. The recommendations encompass the seasonal suspension of grazing in certain riparian areas and the establishment of monitoring practices within riparian areas.

Furthermore, grazing in Rudnick Common will conform with the Livestock Grazing Amendment stipulations in order to protect cultural resources found on the allotment.

1. Livestock Numbers and Season of Use

There would be no decrease from the total number of AUMs or numbers of cattle which the Rudnick Trustees (Onyx Ranch) or the Onyx Mtn. Ranch would be permitted to graze. The restrictions on grazing would be limited to the places where cattle were permitted to graze during the critical spring growing season. Table A, in the Current Management Alternative would remain unchanged.

2. Livestock Management

The BLM, under the authority of CFR 4180.1 which includes by reference subparts 4110, 4120, 4130, and, 4160, will:

1. suspend grazing during the critical spring season of growth (3/1-5/31) in areas where riparian rangeland health standards have not been met; and
2. in all areas occurring in tortoise habitat, authorize ephemeral grazing only when ephemeral production exceeds 230 pounds per acre; and
3. all cattle carcasses would be removed or disposed of in an appropriate manner; and
4. establish utilization studies to include key riparian forage species. These species and their proper use factors are:
 - a. Salt Grass (30%)
 - b. Sedge (30%)
 - c. Rushes (30%)
 - d. Willow (10%).
 - e. Cottonwood (10%)

The proper use factors (PUFs) for these species will act as thresholds which if met or exceeded will trigger the removal of livestock from the area. These actions will become addenda to the Rudnick Common Allotment Management Plan (AMP).

The Rudnick Common Allotment Management Plan (AMP) will be modified and further implemented to ensure:

1. all pastures (excluding Sheep Troughs pasture) will receive at least one growing season rest between use periods.
2. existing range improvements will be brought into functioning condition, maintained and upgraded where appropriate. Constructed proposed new projects to better distribute cattle in Aqueduct, Canyons, Kelso Valley, Dove Spring, and Bird Springs pastures
3. drift fences will be constructed on Frog Pass, on Gold Peak into Butterbrecht Valley, on Bird Springs, and at the head of Willow Springs Canyon to reduce out of season use of vegetation from uncontrolled drift.

Exclosure fences will be constructed at the following riparian sites to increase seasonal flexibility for grazing. These sites are:

1. Butterbrecht Canyon (about 2 miles, fencing proposed)
2. In Hoffman Canyon (T29S, R36E, S34)
3. In Jawbone Canyon above the confluence of Cottonwood Creek (T30S, R36E, S30, 1/4NE, 1/4SE)

Furthermore, exclosure fences will be constructed at the following sites to enhance riparian values:

1. Kelso Creek (West – 1 mile)
2. Kelso Creek (Mid < 1 mile)
3. Kelso Creek (upstream – ½ mile)
4. Kelso Creek & Woolstaff Creek (3/4 mile – in progress)
5. Williams Spring (1/8 mile – project proposed)
6. Willow Spring pond (project proposed)

Float valves will be installed in watering troughs where necessary to control water loss from water sources.

All existing cattleguards within tortoise habitat will be modified to provide escape opportunities for those tortoises which become trapped, falling through the grates.

Furthermore, livestock will be managed in such a way that cultural resources will be protected.

Measures to Adhere to Livestock Grazing Amendment of Cultural Resources Protocol:

To reduce or eliminate impacts to cultural resources within the allotment, terms and conditions of the Livestock Grazing Amendment will be followed. These terms will also be incorporated into the Terms and Conditions of the Permit. Actions under the Amendment will include planning and scheduling, inventory and other pertinent identification efforts, consultation with tribal and other interested parties, evaluation of resources as required under the Amendment, application of Standard Protective Measures from the Amendment, monitoring, and reporting of results to the BLM California State Office and the State Historic Preservation Officer. A schedule for carrying out these actions will be established as part of the 2004 annual report on implementation of the Addendum. As identification efforts are carried out and Standard Protective Measures from the Addendum are applied, impacts to cultural resources will be eliminated or reduced to a level that is in compliance with the Addendum. If Standard Protective Measures cannot achieve compliance with the Addendum, consultation with the State Historic Preservation Officer will be initiated.

Standard Protective Measures can include but are not limited to:

A. Fencing or enclosure of livestock from the cultural resource sufficient to ensure long-term protection, according to the following specifications:

1. the area within the enclosure must be inventoried to locate and record all cultural resources; and
2. the enclosure (i.e.) fence must not divide a cultural resource so that a portion is outside of the fence; and
3. the cultural resource specialist will determine the appropriate buffer to be provided between the cultural resource and its enclosing fence.

B. Relocation of livestock management facilities/improvements at a distance from cultural resources sufficient to ensure their protection from concentrated grazing use.

C. Removal of natural attractants of livestock to a cultural resource when such removal, in the judgment of the cultural resource specialist, will create no disturbance to the cultural resource (e.g. removing vegetation that is providing shade).

D. Removal of the area(s) containing cultural resources from the allotment.

E. Livestock herding away from cultural resource sites.

F. Use of salting and/or dust bags or dippers placement as a tool to move concentrations of cattle away from cultural sites.

G. Other protective measures established in consultation with and accepted by SHPO.

H. Conduct yearly monitoring to ensure that treatment measures are effective.

3. Range Improvements

The proposed range improvements enumerated in Section B of the Proposed Action would receive high priority for completion so as to better serve the rancher, the rotational grazing system, and the health of the riparian ecosystems involved. Other range improvements as listed in Appendix 3. (under the Current Management alternative) would still be necessary in order to fully implement the Allotment Management Plan. When working in desert tortoise habitat, any hazards to desert tortoises that may be created, such as auger holes and trenches, would be eliminated, before the rancher, contractor, or work crew leaves the site.

4. Measures taken to Maintain or Achieve Standards

See, Section B. of the Proposed Action, above.

5. Monitoring

Same as the Current Management Alternative, with the addition of what is detailed above in Section B of the Proposed Action alternative.

6. Regional Standards and Guidelines

With the recent approval of the West Mojave Habitat Conservation Plan Amendment the following Standards and Guidelines are incorporated into the grazing permit & management practices.

Standards:

Soil

Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate geology, landform, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor , and provide a stable watershed as indicated by:

- Canopy and ground cover are appropriate for the site;
- There is diversity of plant species with a variety of root depths;
- Litter and soil organic matter are present at suitable sites;
- Maintain the presence of micro biotic soil crusts that are in place;
- Evidence of wind or water erosion does not exceed natural rates for the site;
- Hydrologic and nutrient functions maintained by permeability of soil and water; infiltration are appropriate for precipitation.

Native Species

Healthy, productive and diverse habitats for native species, including special status species (Federal T&E, federal proposed, federal candidates, BLM sensitive, or California State T&E, and CDD UPAs) are maintained in places of natural occurrence as indicated by:

- Photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes;

- Plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment;
- Plant communities are producing litter within acceptable limits;
- Age class distribution of plants and animals are sufficient to overcome mortality fluctuations;
- Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events;
- Alien and noxious plants and wildlife do not exceed acceptable levels;
- Appropriate natural disturbances are evident;
- Populations and their habitats are sufficiently distributed to prevent the need for listing special status species.

Riparian/Wetland and Stream Function

Wetland systems associated with subsurface, running, and standing water, function properly and have the ability to recover from major disturbances. Hydrologic conditions are maintained as indicated by:

- Vegetative cover will adequately protect banks, and dissipate energy during peak water flows;
- Dominant vegetation is an appropriate mixture of vigorous riparian species;
- Recruitment of preferred species is adequate to sustain the plant community;
- Stable soils store and release water slowly;
- Plants species present indicate soil moisture characteristics are being maintained;
- There is minimal cover of invader/shallow-rooted species, and they are not displacing deep-rooted native species;
- Maintain shading of stream courses and water sources for riparian dependent species;
- Stream is in balance with water and sediment being supplied by the watershed;
- Stream channel size and meander is appropriate for soils, geology, and landscape;
- Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

Water Quality

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California State Standards, as indicated by:

- The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen;
- Achievement of the Standards for riparian, wetlands, and water bodies;
- Aquatic organisms and plants (e.g., macro invertebrates, fish and algae) indicate support of beneficial uses;
- Monitoring results or other data that show water quality is meeting the Standard.

Guidelines for Grazing Management:

Manage grazing activities with the following regional guidelines.

- Facilities are to be located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland functions.

- The development of springs and seeps or other projects affecting water and associated resources will be designed to protect the ecological functions and processes of those sites.
- Grazing activities at an existing range improvement that conflict with achieving proper functioning conditions (PFC) and resource objectives for wetland systems (lentic, lotic, springs, adits, and seeps) will be modified so PFC and resource objectives can be met, and incompatible projects will be modified to bring them into compliance. The BLM will consult, cooperate, and coordinate with affected interests and livestock producer(s) prior to authorizing modification of existing projects and initiation of new projects. New range improvement facilities are to be located away from wetland systems if they conflict with achieving or maintaining PFC and resource objectives.
- Supplements will be located a sufficient distance away from wetland systems so they do not conflict with maintaining riparian wetland functions.
- Management practices will maintain or promote perennial stream channel morphology (e.g., gradient, width/depth ratio, channel roughness, and sinuosity) and functions that are appropriate to climate and landform.
- Grazing management practices are to meet State and Feral water quality standards. Where impoundments (stock ponds) and troughs that have a sustained discharge yield of less than 200 gallons per day to surface or groundwater are exempted from meeting State drinking water standards per SWRCB Resolution Number 88-63.
- In the California Desert Conservation Area all wildfires in grazing allotments will be suppressed. However, to restore degraded habitats infested with invasive weeds (e.g., tamarisk) prescribed burning may be utilized as a tool for restoration on a case-by-case basis. Prescribed burns may be used as a management tool for chaparral plant communities in the South Coast Region, where fire is a natural part of the regime.
- In years when weather results in extraordinary conditions seed germination, seedling establishment and native plant species growth shall be allowed by modifying grazing use.
- Grazing on designated ephemeral (annual and perennial) rangeland is allowed to occur only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.
- During prolonged drought, range stocking will be reduced to achieve resource objectives and/or prescribed perennial forage utilization. Livestock utilization of key perennial species on year-long allotments will be checked about March 1 when the Palmer Severity Drought Index/Standardized Precipitation Index indicates dry conditions are expected to continue.
- Through the assessment process or monitoring efforts, the extent of invasive and/or exotic plants and animals will be recorded and evaluated for future control measures. Methods and prescription will be implemented, and an evaluation will be completed to ascertain future control measures.
- Restore, maintain or enhance habitats to assist in the recovery of federally listed threatened and endangered species. Restore, maintain or enhance habitats of special status species including Federal proposed, Federal candidates, BLM sensitive, or California State T&E to promote their conservation.
- Grazing activities will support biological diversity across the landscape, and native species and micro biotic crusts are to be maintained.

Experimental and research efforts will be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts with outside agencies, groups, and entities.

C. NO GRAZING ALTERNATIVE

This alternative would cancel the permits on the Rudnick allotment. As a result, grazing would not continue on the Rudnick allotment. This is to be a permanent cancellation. The BLM would initiate a process in accordance with the 4100 regulations to permanently eliminate grazing on the allotment.

CHAPTER 3: ENVIRONMENTAL ANALYSIS

A. AIR QUALITY

a. Affected Environment

Air quality throughout the allotment area is generally good. There are, however, times that portions of the area have not meet air quality standards due to locally generated and/or transported in pollutants. Currently portions of the project area are classified as nonattainment areas for ozone and PM₁₀ under state standards and attainment for ozone and maintenance for PM₁₀ under National Ambient Air Quality Standards (NAAQS). The area is unclassified for the new PM_{2.5} standard. The Rudnick Common Allotment falls within the USEPA designated East Kern County Ozone planning area (attainment for one-hour and eight hour standard), Indian Wells Valley PM₁₀ Planning Area (maintenance). The portions of the allotment from Dove Springs south, Kelso Valley and Kelso Creek are unclassified for PM₁₀.

Ozone pollutants occur in the area primarily from transport in from the South Coast Air Basin and the San Joaquin Valley Air Basin. The USEPA recently classified most of the area as a federal attainment area for the new eight-hour ozone standard. Livestock grazing is not identified as an issue for the ozone attainment plan.

A maintenance/attainment plan has been prepared for the Indian Wells Valley PM₁₀ planning area which identifies sources of PM₁₀ emissions and control measures to reduce emissions. Livestock grazing is not specifically addressed in the PM₁₀ plan. The KCAPCD plans to extend the current fugitive dust control plan from the current Indian Wells Valley version to one which covers the entire air pollution control district.

b. Environmental Consequences

1. Impacts of Current Management

Direct and Indirect Impacts:

Fugitive dust could occur due to the soil disturbance as a result of the trampling action of the cattle when soil moisture levels are low. PM₁₀ emissions as a result of the existing grazing activities are estimated to be well below the 100 ton significant level in the allotment. Support vehicle use on the access roads will generate small amounts of PM₁₀ emissions throughout the grazing area and could carry soils onto the paved roads which would increase entrainment emissions. Grazing related PM₁₀ emission levels are not considered significant in the PM₁₀ SIP. Ruminant animals emit methane gas which is a precursor emission for ozone. The ozone attainment plan did not identify this source as significant. Ozone precursor emissions are expected to be minimal. No significant offsite impacts are anticipated. The existing grazing use doesn't exceed the de minimus emission levels and is exempt

from conformity determination (40 CFR Part 93.153 (iii)) which exempts continuing and recurring activities such as permit renewals where activities will be similar in scope and operation to activities currently being conducted. As a result no further conformity analysis or determination is necessary.

Irreversible and irretrievable commitment of resources

No irreversible or irretrievable commitment of air resources would result.

Residual Impacts

Residual impacts to air quality include continued dust emissions from vehicle activity and grazing operations and hydrocarbon and combustion emissions from ruminant animals and internal combustion engines during the grazing operations. No long term residual adverse effects on air resources are expected from the existing situation. The impacts are expected to occur during the duration of the existing grazing. Once the action is completed the site should return to pre grazing emission levels.

Cumulative Impacts

The cumulative effect area for air resources for the existing situation is the Indian Wells Valley PM₁₀ planning areas and the East Kern County Ozone attainment area. In addition to the livestock grazing in the area, additional PM₁₀ emissions are occurring as a result of OHV use in the general area plus two OHV open areas. Utility Right-of-way maintenance on the two Los Angeles Aqueducts and a power line corridor which run the length of the allotment are also sources of PM₁₀ emissions. The expected emission levels are within the levels in the attainment demonstrations in the SIPs and the cumulative NAAQS 24 hour and one year PM_{2.5} and PM₁₀ emission standards and the one and eight hour ozone emission standards and are not likely to result in or contribute to exceedences of the National Ambient Air Quality Standards.

Recommended mitigation measures

None

2. Impacts of Proposed Action

Impacts to air quality as a result of the proposed action would be the same as the existing situation.

3. Impacts of no Grazing

No impacts to air would occur as a result of grazing activities.

4. Cumulative Impacts

N/A

c. References

References listed at the end of the document.

B. AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

a. Affected Environment

The Rudnick grazing allotment overlaps the Jawbone/Butterbrecht Area of Environmental Concern (ACEC). The Management Plan was written in 1982 as an ACEC Plan and a Habitat Management Plan, signed by both BLM and the California Department of Fish and Game. The Objectives are: "...to protect and improve wildlife species and habitats, Native American, and other natural and cultural resources, while allowing appropriate land uses." The ACEC is made up of 153,000 acres of public land, 48,000 acres of Rudnick estate trust land and 10,000 acres of other ownership, making a total of 211,000 acres.

"Sensitive and significant Native American heritage and religious sites were identified in portions of the ACEC during preparation of the CDCA Plan. These sites were historically used by the Kawaiisu for traditional religious purposes. Kawaiisu people in Bakersfield, Kernville, and Tehachapi have expressed concern and interest in preserving and protecting these traditional religious sites" (USDI, BLM 1982:9). In regards to other cultural resource values, "...the management area contains several identified areas of very high archaeological and historical values. These archaeological resources have high potential scientific interest, aesthetic and interpretive value, and many have Native American traditional concerns. Many of these sites may be eligible for placement on the National Register of Historic Places" (Ibid.:9). The ACEC management plan also stated that, "the existing uses are compatible but must be limited or reduced in portions of the area to reverse degradation of cultural resource values...especially near water sources, riparian zones..." (Ibid:9). Identification and recordation of all cultural resources within the ACEC, called for in the plan (p. 17), has never taken place, nor have the required efforts to stabilize or rehabilitate damaged sites or salvage sites that cannot be saved. Descriptions of cultural resources and Native American values present within the ACEC are discussed more fully in the relevant sections of this document.

The ACEC Plan discussed livestock grazing use philosophy primarily in terms of impacts to riparian areas. The adverse effects listed were the removal of cover important to wildlife and increased soil erosion and subsequent loss of vegetation resulting in siltation and the reduction in of surface water quantity and quality. Water quality problems from cattle defecating in the water can impact aquatic organisms. Grazing has the potential to reduce species diversity by reducing the diversity of plant species and structural diversity of the plant community itself.

The ACEC is heavily used by motor vehicles, especially OHVs for recreation. Two Open Areas, Jawbone and Dove Spring, are heavily used each year. OHV use is heavy in the areas around each one as well, making the impacts from the two areas much greater than envisioned. Outside the Open Areas, use is restricted to designated routes. There is a high level of non-compliance with this rule, however, and there are ongoing restoration activities to reduce the problem.

Wildlife, riparian, and other resources are discussed more thoroughly in their respective sections in the document.

b. Environmental Consequences

1. Impacts of Current Management

Direct and Indirect Impacts: The ACEC management plan is silent on the issue of grazing impacts to the Native American values for which the ACEC was established and to other cultural resources.

Since the ACEC management plan was written, impacts from OHV activity have increased. Recently, impacts from cattle grazing have been identified

Impacts by cattle grazing in the riparian areas affect the purpose of the plan which is to “protect and enhance” the natural resources. The problem areas identified in the assessments should benefit from the implementation of the AMP, leading to a “met” rating.

The impacts of grazing to specific resources may be reviewed elsewhere in the document, in Wildlife, Vegetation, and Wetlands/riparian sections and others. Impacts to archaeological properties and Native American values are described and discussed in greater detail in the Cultural Resources and Native American sections of this document.

Proposed Mitigation

No additional mitigation is proposed for the ACECs. .

Residual Impacts:

Impacts to the ACECs can be ascertained by reviewing the impacts from the respective Wildlife and Cultural resources sections of this EA.

Irreversible and Irretrievable Resources:

Renewable resources would not be lost. See Cultural for a discussion of grazing impacts on them.

Cumulative Impacts:

The ACEC has a high level of recreational use, primarily OHV use, but also day use, picnicking, camping, hiking, running, horseback riding, birdwatching, and others. In addition, flooding has historically impacted the canyons. The LADWP aqueduct cuts through the ACEC and has significant activity associated with it. Portions of the ACEC are designated Wilderness. Proposed Wind Energy developments would contribute to impacts.

Recent archaeological inventory within the Jawbone-Butterbrecht ACEC (Bevill and Nilsson 2004) indicates that many archaeological sites and areas identified as having Native American values attached are being affected by multiple activities. Grazing, OHV use, hunting, other recreation use, and site vandalism and illegal artifact collection are causing significant adverse effects to many resources within the ACEC. Many of these activities have gone on for decades; grazing has occurred in the area for a hundred years or more. Consequently, the long-term cumulative impact to the cultural resource base within the ACEC has been severe.

2. Impacts of Proposed Action

Direct and Indirect Impacts:

Following the terms of the Livestock Grazing Amendment should halt or significantly reduce impacts to cultural resources. If it is found that implementation of the Amendment will not achieve acceptable results, consultation between BLM and the State Office of Historic Preservation and Native Americans will be designed to do so.

Proposed Mitigation: No further mitigation is proposed for the ACEC.

Residual Impacts: Residual impacts the same as for Current Management

Irreversible and Irretrievable Resources: Irreversible and irretrievable resources same as for Current Management.

Cumulative Impacts: Cumulative impacts the same as for Current Management.

3. Impacts of no Grazing

Direct and Indirect Impacts: This alternative would discontinue direct impacts that are currently occurring.

Some kinds of impacts, such as damage from eroding soils, may continue after grazing has been discontinued unless remediative action is taken. Impacts to sacred values may be permanent since these values may not be recoverable or restorable by any physical steps to improve local conditions. There would be no grazing impacts to the “protect and enhance” the natural resources goal. Those “not met” problem areas due to grazing would become “met” areas over time.

The impacts of no grazing to specific resources may be reviewed elsewhere in the document, in Cultural, Wildlife, Vegetation, and Wetlands/riparian sections and others.

Proposed Mitigation

No additional mitigation is proposed for the ACECs. .

Residual Impacts: Impacts to the ACECs can be ascertained by reviewing the impacts from the respective Wildlife and Cultural resources sections of this EA.

Irreversible and Irretrievable Resources: Renewable resources would not be lost. See Cultural for a discussion of grazing impacts on this resource.

Cumulative Impacts:.

No further impacts from cattle grazing would occur, however, impacts from other activities as mentioned above would continue to accrue.

c. References

Listed at the end of the document.

C. BIOLOGICAL SOIL CRUSTS

a. Affected Environment

Biological soil crusts are likely to occur over most of the Allotment. Soil crusts were found at 26 of the 44 upland sites sampled during the rangeland health assessments. Soils with these crusts are often referred to as cryptogamic soils. The open space between higher plants is not generally bare of all life. Highly specialized organisms make up a surface community consisting of cyanobacteria, green algae,

lichens, mosses, microfungi and other bacteria. The cyanobacteria and microfungi filaments weave through the top few millimeters of soil holding loose soil particles together forming a biological crust which stabilizes and protects soil surfaces. The biological crusts aid moisture retention, fix nitrogen, and may discourage the growth of annual weeds. Below the surface, the soil flora grow various rhizines, hyphae and filaments that further bind the soil together. Most of the biological crust organisms make their growth during cool moist conditions.

b. Environmental Consequences

1. Impacts of Current Management:

Direct and Indirect Impacts:

It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. As a result the crusts in these areas are easily disturbed by trampling by grazing animals which apply compressional and shear forces. The crust response to these disturbances is highly variable. Moisture and burial are two important factors relating to the degree of impact. Moist crusts are better able to withstand disturbances than dry soils. Many of the biological crust species are not mobile and cannot survive burial. This results in the loss of most mosses, lichens, green algae and small cyanobacteria. The large, filamentous cyanobacteria can move 5mm per day if it is wet and can survive if it is wet. The general result of burial is a greatly simplified crustal community due to the loss of species. Grazing in the late winter and spring can reduce both species diversity and cover of biological crusts because the soils are dry. These allotments have been grazed for over one hundred years and it is likely that continued grazing would not make any appreciable additional changes in the biological crust species diversity.

Irreversible and Irretrievable commitment of Resources:

Biological soil crusts can recover from disturbance over time. The time factor is dependent upon the degree of displacement and soil moisture. In moist conditions partial recovery of the mobile species can occur in days. More complete recovery of all species on a site can be from five to seventy years.

Residual:

The same as Direct and Indirect Impacts

Cumulative Impacts:

The long term result of continued impacts is a greatly simplified crustal community due to the loss of species..

Recommended Mitigation:

None

2. Impacts of Proposed Action:

Similar to existing situation

3. Impacts of No Grazing

Direct and Indirect Impacts:

A slow recovery of the less mobile crust species would occur.

Irreversible and Irretrievable commitment of Resources:

Biological soil crusts can recover from disturbance over time. The time factor is dependent upon the degree of displacement and soil moisture. In moist conditions partial recovery of the mobile species can occur in days. More complete recovery of all species on a site can be from five to seventy years.

Residual:

Same as direct impacts

Cumulative Impacts:

The long term result of removing grazing impacts is a more complex crustal community due to species recovery.

Recommended Mitigation:

None

D. CULTURAL RESOURCES

a. Affected Environment

Efforts to identify cultural resources within the allotment have focused on discussion of sacred and traditional concerns on the part of Kawaiisu people and inventory for historic and prehistoric archaeological resources. Native American concerns will be discussed in that section.

The Rudnick allotment is rich in archaeological resources. . The allotment runs from the valley bottom up the east slope of the Sierras and over the crest to Kelso Valley on the west slope. It encompasses a variety of environmental zones and contains a series of riparian canyons. These canyons were foci of prehistoric habitation and use as people moved seasonally up and down slope to make use of seasonally available plant and animal species. The allotment, therefore, coincides with the primary habitation patterns of prehistoric populations. It is well watered compared to adjacent areas and contained numerous useable plant and animal species, as well as other resources of importance to prehistoric populations. In addition, Walker Pass, on the northeastern side of the allotment, and Bird Spring Pass, on the northwest side of the allotment, were important travel corridors over the mountains, focusing activity in their vicinity. From these travel corridors people fanned out across the east slope of the Sierras, especially into the vicinity of the watered canyons. Archaeological site densities are unusually high, indicating heavy use of the area by prehistoric populations. Historic archaeological materials are also present in high numbers, indicating that this area was early recognized by historic populations as having resources of value.

Until recently, inventory within the Rudnick allotment for cultural resources was quite sparse. Several recent efforts have increased our level of inventory considerably. In 2002 and 2003 inventory was

carried out by BLM archaeologists on many of the vehicle routes within the Jawbone-Butterbrecht ACEC for purposes of route designation and maintenance, and for rehabilitating unauthorized routes. In 2003, archaeological inventory was carried out on a corridor along the First and Second Los Angeles Aqueducts (Bevill and Nilsson 2003 Draft). In 2002 and 2003, BLM contracted with URS Corporation to do a Class III (100%) inventory of the Jawbone and Dove Spring Open Areas and a Class II (sample) inventory of the Jawbone-Butterbrecht ACEC (Bevill and Nilsson 2004 Draft). The latter inventory covered 2000 acres within the Jawbone OHV Open Area, 3300 acres within the Dove Spring OHV Open Area, and 5,185 acres (approximately 5%) of the Jawbone-Butterbrecht ACEC outside the open areas. Because the allotment encompasses large areas outside the Jawbone-Butterbrecht ACEC the total coverage within the allotment is still less than 5%. However, enough data has been collected for a large portion of the allotment to be able to draw some conclusions about archaeological resources within the allotment.

Approximately 216 prehistoric and historic archaeological sites have been formally recorded within the allotment. A number of other sites are known about but not formally recorded. Prehistoric site types and constituents include permanent or seasonal habitation sites; house rings; ground stone such as manos, metates, and bedrock milling areas; rock art (petroglyphs/pictographs); ceramics; projectile points; flaked stone tools and residue from producing the tools; burials; and other cultural manifestations. Prehistoric archaeological manifestations represent the entire gamut of daily activities that would have been carried out by native populations. Historic materials include pottery, rock walls and features, foundations, structures, mine shafts and adits, rock cairns, historic trails and roads, rock quarries, dumps, tin cans and other metal items, and bottle glass. Many of these sites are associated with construction of the First and Second Los Angeles Aqueducts. Others are associated with early mining efforts and some may be associated with early grazing activity.

None of the sites within the allotment have been formally evaluated for eligibility for listing in the National Register of Historic Places, although sites along the Los Angeles Aqueducts are currently in the process of evaluation. Many of the known sites would undoubtedly be found to be eligible if formally evaluated since they exhibit characteristics that indicate the potential to yield important information, a criterion for being listed in the National Register of Historic Places. Recent inventory and initial evaluation of archaeological sites within the Jawbone-Butterbrecht ACEC (Bevill and Nilsson 2004) has shown that archaeological sites within the area would yield information on distribution of archaeological sites in relationship to natural resources, prehistoric chronology of the area, subsistence patterns and use of natural resources, and technology and exchange patterns. All of these are key areas of investigation to further our understanding of prehistoric life within the general region. Historic sites can yield information on the range of historic activities that took place in the area, including mining, travel and transportation, ranching, and important technological innovations associated with construction of the Los Angeles Aqueduct, which was a major significant historic event to the region (Bevill and Nilsson 2004; Bevill *et al* 2003).

Site densities encountered during the Jawbone-Butterbrecht ACEC inventory range from 1 site per 31 acres to 1 site per 118 acres (Bevill and Nilsson 2004:90). Informal plotting of recorded sites against areas exhibiting various levels of cattle activity shows a high correlation between areas with high site densities and areas of high or moderate cattle usage. These tend to be riparian areas, springs, areas containing denser vegetation of types that are favored by cattle and that were of most use to prehistoric populations, and ecotonal areas with a variety of resources. Denser site complexes exist within Sage Canyon, Bird Spring Canyon, Dove Spring Canyon, Jawbone Canyon, and along Kelso Creek.

b. Environmental Consequences

1. Impacts of Current Management

General discussion of how grazing impacts archaeological resources is available. The following discussion is taken from Environmental Assessment Livestock Grazing Authorization, EA Number CA 170-03-54, BLM Bishop Field Office, December 2003.

Livestock use impacts on cultural resources include: displacement (vertical and horizontal) and breakage of artifacts, and the mixing of depositional associations through trampling; destruction or enhanced deterioration of structures and features through rubbing; and an acceleration of natural erosional processes. Plants valued by Native American traditionalists could be trampled or consumed by livestock, adversely affecting plant availability at some locations. For purposes of analysis it is assumed that the impacts of livestock use are distributed in proportion to the actual distribution of livestock, with the most intensive impacts occurring at livestock use concentration areas. Cultural resources located on lands having erosional or other types of watershed deterioration problems attributed to livestock use impacts are assumed to receive high impacts. Cultural resources are non-renewable, and impacts of livestock use on cultural resources are cumulative (USDI, BLM 1982).

Relatively few studies have been undertaken to address the impacts of domestic livestock grazing to archaeological resources (Archaeological Sites Protection and Preservation Notebook: Technical Notes (ASPPN) I-15; Osborn et al. 1987; Roney 1997; Thomas D. Burke personal communication [to Kirk Halford, ed. note] 1998), with more emphasis being placed on the effects of human trampling in site formation processes (see Nielson 1991). Nonetheless, the same conclusions have been drawn from these studies as summed by Nielson (1991).

Intensive trampling modifies the horizontal distribution of artifacts, it obscures patterns existing in their original deposition, and eventually introduces new trends in their spatial arrangement. By producing vertical migration of materials it also can move artifacts across stratigraphic units, and mix in the same deposit items originating in different occupations. When trodden, artifacts undergo several types of damage, like breakage, micro-chipping and abrasion. The resulting traces sometimes mimic the damage produced by use or by other post-depositional processes and therefore can lead unwittingly to erroneous functional interpretations (Nielson 1991:483-484).

Variables influencing the level of impact at any given site include: 1) soil type (e.g., hard or rocky soil substrates will lead to greater artifact damage and horizontal displacement); 2) soil moisture (e.g., wet soils will lead to greater vertical displacement and stratigraphic mixing); 3) vegetation type/ground cover (depending on site landform specifics, erosion may increase as vegetation cover decreases resulting in significant secondary impacts); and 4) intensity of grazing.

The studies reviewed here are experimental tests of trampling impacts (Archaeological Sites Protection and Preservation Notebook: Technical Notes (ASPPN) I-15, 1990; Nielson 1991; Osborn et al. 1987; Roney 1977). All of the studies found that smaller artifacts (< 2 g [ASPPN 1991]) tend to migrate vertically more readily than larger artifacts thus biasing site interpretation in cases where no subsurface analyses are involved. In a controlled experiment within a portable corral, Roney (1977) found that after 40 hours, in which 78 cows were rotated through the corral, that only 5% of 60 flaked stone artifacts could be found on the surface. The hard soil substrate was churned to a fine dust to 5 cm (depth, approximately 2

inches, ed. note), 81% of the artifacts were horizontally displaced up to .75 m(meters [approximately 2 feet], ed. note) and 48% were damaged and broken. Roney (1977) concluded that "...cattle do produce significant physical damage to lithic artifacts."

Nielson (1991), in his assessment of human trampling, found the same trends with top soil loosening occurring in 1-2 cm (depth, approximately 1 inch or less) on a hard soil substrate with subsoils being compacted. Again smaller items tended to migrate downward, but were less apt to move horizontally than large specimens. Sixty percent of the lithic debitage (stone flakes from tool manufacture, ed. note) showed damage ranging from abrasion, microflaking, and breakage. As would be expected, ceramics showed the greatest level of impact with a random distribution of sizes being reduced to a skewed, unimodal distribution dominated by smaller size classes less than 30 cm (12 inches, ed. note) in diameter. We can predict that cattle impacts would be highly magnified over Nielson's (1991) results from his studies on human trampling, but would follow the same trends.

In field visits Tom Burke (personal communication 1998), owner and principal investigator of Archaeological Research Services, Inc., has found cattle grazing to have "substantial adverse effect to archaeological site integrity." In heavy use areas mixing can occur up to 10-20 cm (centimeters; 4 to 8 inches, ed. note) in most conditions and up to 30-40 cm (12 to 16 inches, ed. note) in wet conditions. The author's investigations corroborate Burke's assessments. As would be expected, Burke has found impacts to be highest in areas where cattle tend to congregate such as springs, water courses, troughs, shade zones, and salt licks. The zone of impact around such features extends from 25-100 meters (approximately 75-300 feet, ed. note), with a linear pattern of roughly 25 to 50 meters (approximately 75 to 150 feet, ed. note) following stream courses. Field assessments in the Bishop Field Area support these observations.

In summary, it can be concluded that livestock grazing can have adverse effects to archaeological resources causing artifact damage, movement, and mixing. In the case of standing structures, cattle rubbing or scratching can cause severe impacts causing structure degradation and collapse (Chuck Fell, Bodie State Historical Park, personal communication 1995). Intensity of grazing, soil hardness, moisture, vegetation cover, and type are factors influencing the level and types of impacts. Erosion is a secondary impact resulting from grazing that can also have negative effects to cultural sites. The areas of greatest concern are those locations where livestock congregate and tend to spend a large percentage of the time. In zones where livestock are more dispersed, such as upland locations, it can be predicted that impacts will be mainly surficial, causing no stratigraphic mixing, but perhaps resulting in horizontal displacement of artifacts. In rocky areas and zones without sufficient feed very little to no cattle impact is expected to occur (field observation 1999). (The above discussion taken from USDI, BLM 2003.)

Inspection of drainages in grazed areas that contain water for all or most of the year has shown that areas along the creek banks are heavily impacted by cattle, resulting in high levels of soil compaction and vegetation removal. These activities would have significant adverse effects upon archaeological materials and features on the ground. Cattle may also break artifacts lying on the surface of the ground or displace them both horizontally and vertically, both of which affect the ability to derive information from archaeological materials. Impacts other than physical damage may occur. Organic materials deposited by the cattle change the appearance of the soil and make some archaeological manifestations more difficult to discern. "Midden" soils, which are soils that have been turned dark and ashy by the deposit of human refuse over long periods of time and are important in identifying

locations of prehistoric habitation, may be masked by the additional organic material deposited by grazing cattle. These materials may also render some types of scientific analysis difficult or useless because they affect prehistoric organic materials that might be collected for analysis, such as blood serum analysis to determine what species of animals may have been hunted or processed using artifacts collected from an archaeological context.

During the sample inventory of the Jawbone-Butterbrecht ACEC, impacts from cattle grazing were noted at 40 of the recorded sites. Impacts to other sites in heavily used riparian and spring areas are no doubt also occurring.

Recommended Mitigation

Inventory all range improvements that have not already been inventoried for cultural resources or that will be modified, repaired, moved, or upgraded. Relocate or take other steps to avoid additional impacts to cultural resources.

Inventory proposed locations for new improvements for cultural resources. Move the locations as necessary to avoid impacting cultural resources.

Remove all improvements that are situated on or adjacent to cultural resources and causing impacts to those resources to other locations. Use methods of removal designed to cause the least amount of additional impact to the resources.

The following measures from the Livestock Grazing Amendment should be incorporated into the grazing permit if this alternative is selected, to be used as inventory identifies impacts to cultural resources:

Standard Protective Measures will be carried out as inventory identifies effects to cultural resources. If these measures can be effectively applied, no evaluation or further consultation with SHPO will be required. In situations in which these measures will not address effects, consultation with SHPO will be initiated.

Standard Protective Measures can include but are not limited to:

A. Fencing or enclosure of livestock from the cultural resource sufficient to ensure long-term protection, according to the following specifications:

1. the area within the enclosure must be inventoried to locate and record all cultural resources; and
2. the enclosure (i.e.) fence must not divide a cultural resource so that a portion is outside of the fence; and
3. the cultural resource specialist will determine the appropriate buffer to be provided between the cultural resource and its enclosing fence.

B. Relocation of livestock management facilities/improvements at a distance from cultural resources sufficient to ensure their protection from concentrated grazing use.

C. Removal of natural attractants of livestock to a cultural resource when such removal, in the judgment of the cultural resource specialist, will create no disturbance to the cultural resource (e.g. removing vegetation that is providing shade).

D. Removal of the area(s) containing cultural resources from the allotment.

E. Livestock herding away from cultural resource sites.

- F. Use of salting and/or dust bags or dippers placement as a tool to move concentrations of cattle away from cultural sites.
- G. Other protective measures established in consultation with and accepted by SHPO.
- H. Conduct yearly monitoring to ensure that treatment measures are effective.

2. Impacts of Proposed Action

Following the terms of the Livestock Grazing Amendment should halt or significantly reduce impacts to cultural resources. If it is found that implementation of the Amendment will not achieve acceptable results, consultation between BLM and the State Office of Historic Preservation and Native Americans will be designed to do so.

3. Impacts of no Grazing

This alternative would discontinue direct impacts that are currently occurring. Some kinds of impacts, such as damage from eroding soils, may continue after grazing has been discontinued unless remediative action is taken. Impacts to sacred values may be permanent since these values may not be recoverable or restorable by any physical steps to improve local conditions. This alternative would also eliminate an activity that may be considered a historic use in the area and may have adverse impacts on the traditional values of those engaged in the activity

4. Cumulative Impacts

The cumulative impacts of grazing over the past hundred years or so and into the foreseeable future could result in severe degradation or complete destruction of some resources in areas in which the intensity of use is high. Cumulative impacts may occur from other actions, such as vehicle use on routes also used to access grazing allotments or developments, camping in riparian areas that are also frequented by cattle, recreational use of areas also used by cattle, hunting, off-highway vehicle use, site vandalism, and artifact theft, all of which were noted at archaeological resources during recent inventories. Other uses within the allotment that are affecting cultural resources include use and maintenance of the Los Angeles Aqueduct, transmission lines, and access roads to these facilities.

c. Consultation

Consultation with the State Historic Preservation Officer will be required as outlined in the grazing amendment to the state Protocol Agreement and will largely take the form of annual reports on progress and measures taken to avoid, eliminate, or mitigate impacts to cultural resources. Individuals or groups other than Native Americans who may have traditional or cultural concerns about the area will be contacted as they are identified or as they identify themselves to BLM

d. References

Listed at the end of the document

E. ENVIRONMENTAL JUSTICE

a. Affected Environment

The grazing allotment being analyzed is located in rural Kern county. The rural areas of this county are typically occupied by moderate to low-income households. The lessees that hold the grazing leases for the allotment being analyzed typically have moderate incomes. Seasonal laborers that may be hired by the lessees generally come from low-income households

b. Environmental Consequences

1. Impacts of Current Management

The implementation of the proposed action would have an affect but not a disproportionate affect on low-income or minority populations living on or near the allotments being analyzed.

The grazing of livestock in rural Kern County has been a common practice for over 100 years. Typically, ranching has been performed by persons of low to moderate income, and may or may not be considered a minority. There are no Native American communities on or near any of the allotments being analyzed.

2. Impacts of Proposed Action

The impacts of the proposed action on environmental justice would be the same as for current management.

3. Impacts of no Grazing

Under the no grazing alternative there would be an affect but not a disproportionate affect with respect to low-income or minority populations. The loss of livestock grazing in rural Kern county could result in the loss of seasonal employment to a very small component of low-income or minority populations.

4. Cumulative Impacts

There are no known cumulative impacts to low-income or minority populations as a result of current grazing practices (proposed action). The no grazing alternative may have some cumulative present and future impacts to a very small component of low-income or minority populations.

c. Consultation

All affect Native American tribes with traditional ties to the lands within the allotments being analyzed would be consulted.

F. FARMLANDS, PRIME OR UNIQUE

a. Affected Environment

The proposed action and the alternatives would have no affect on prime or unique farmlands because there no lands so designated in the allotment.

G. FLOOD PLAINS

a. Affected Environment

The proposed action and alternative would have no affect on flood plains because there are no flood plains in the allotment.

H. INVASIVE, NON-NATIVE SPECIES

a. Affected Environment

The definition of “weed” is always debatable. Traditional definitions include “plants out of place” or “plants that by their presence conflict with management objectives for the site.” The BLM definition also incorporates the concept of public land health and sustainability and reads: “A weed is defined as a non-native plant that disrupts or has the potential to disrupt or alter the natural ecosystem function, composition and diversity of the site it occupies. Its presence deteriorates the health of the site, makes efficient use of natural resources difficult, and it may interfere with management objectives for that site. It is an invasive species that requires a concerted effort (manpower and resources) to remove from its current location, if it can be removed at all.” “Noxious” weeds refer to those plants which have been legally designated as unwanted or undesirable. This includes national, state, and county or local designations. According to the Federal Noxious Weed Act of 1974 (7 U.S.C. 2802(c)) native plant species are not designated “noxious”. In addition to the state and national noxious plants lists, BLM has issued a “BLM National List of Invasive Weed Species of Concern”. In a 1995 Memorandum of Understanding between the BLM and other federal agencies and the State of California, Priority would be placed on eradication, control or containment of “A” rated weed species and localized infestations of “B” and “C” rated weeds according to California Administrative Code 4500. According to the State of California Department of Food and Agriculture, “A” rated Noxious weeds are to be eradicated, contained or refused entry, “B” rated Noxious weeds are more widespread, and therefore more difficult to contain and eradication is left up to local county Agricultural Commissioners and “C” rated Noxious weeds may be so wide spread that the state does not endorse eradication or containment.

Inventory work conducted over the last several years have detected more than twenty species of noxious/invasive weeds on or adjacent to public lands within the Ridgecrest Field Office. Eleven of those species occur on or adjacent to The Rudnick Common Allotment (table 1). Two of those species have been identified for control in the area. Some of these species are quite widespread in the area. Red brome, cheat grass and Arabian grass are found through out the allotment. Infestations of some of the other weed species range in size from single plants to thousands of plants covering hundreds of acres. Recent inventory work has detected additional species which may need control work. In addition to the new species detected, range expansions have been noted at several sites. Inventory work has detected a nearly ten fold increase in the area infested by salt cedar in the past ten years. Salt cedar is found in a number of sites in the Rudnick Common Allotment.

Bossard et al (2000) note that the “presence of salt cedar is associated with dramatic changes in geomorphology, groundwater availability, soil chemistry, fire frequency, plant community composition and native wildlife diversity.” The non-native annual grasses such as cheat grass, red brome and Arabian grass are thought to deteriorate wildlife habitat values by out-competing the more desirable native forbs for nutrients and space. Non-native invader species such as red brome and cheat grass are wide spread in the allotment and have been related to overgrazing. The current relation of

these species to grazing is unknown as they are as prevalent in isolated areas which have never been grazed as they are in grazed areas. Grazing related weedy invader species have not become a problem in the allotment.

Invasive/Noxious Weeds Rudnick Common Allotment Table 1			
Common Name	Scientific Name	CDEFA Rating	CalEPPC Rating
tree of heaven	<i>Ailanthus altissima</i>	C	A-2
downy brome(cheat grass)	<i>Bromus tectorum</i>		A-1
Moroccan mustard	<i>Brassica tourenfortii</i>		A-2
salt cedar	<i>Tamarix ramosissima</i> (&others)	C	A-1
red brome grass	<i>Bromus (rubens) madritensis</i> <i>Ssp. rubens</i>		A-2
black mustard	<i>Brassica nigra</i>		B
Russian thistle	<i>Salsola tragus</i>	C	
tansy mustard	<i>Descurania sophia</i>		
Mediterranean mustard	<i>Hirschfeldia incana</i>		
Mediterranean grass	<i>Schismus arabicus</i>		
Mediterranean grass	<i>Schismus barbatus</i>		

b. Environmental Consequences

1. Impacts of Current Management

Direct and Indirect Impacts:

It is unknown what role the cattle would have in maintenance, spread or introductions of new noxious weeds. The cattle could be shipped from areas which may have noxious weed populations. It may be possible for the cattle to carry seeds with them. It is possible that the cattle spread existing noxious weed populations by mechanically moving seeds and modifying high intensity use sites to provide a more favorable environment for the weeds.

Irreversible and Irretrievable commitment of Resources:

The introduction of exotic species, especially noxious weeds is very difficult if not impossible to reverse. Some of the noxious weeds have the potential to totally dominate a site.

Residual:

Cumulative Impacts:

Weed encroachment is a regional and national problem. Weeds found in the Rudnick Common Allotment are part of the larger problem.

Recommended Mitigation:

Continue to inventory for weed populations and use an integrated approach for management.

2. Impacts of Proposed Action

Direct and Indirect Impacts:

Impacts will be similar to the existing situation. Improvements in site conditions and native plant cover discourage invasive species.

Irreversible and Irretrievable commitment of Resources:

The introduction of exotic species, especially noxious weeds is very difficult if not impossible to reverse. Some of the noxious weeds have the potential to totally dominate a site.

Residual:

The same as Direct and Indirect Impacts

Cumulative Impacts:

Same as current management.

Recommended Mitigation:

Same as current management.

3. Impacts of no Grazing

Direct and Indirect Impacts:

Grazing would cease to be a factor in weed management, but the weeds would continue to be a problem in the area.

Irreversible and Irretrievable commitment of Resources:

The introduction of exotic species, especially noxious weeds is very difficult if not impossible to reverse. Some of the noxious weeds have the potential to totally dominate a site.

Residual:

The same as Direct and Indirect Impacts

Cumulative Impacts:

Same as current management

Recommended Mitigation:

Same as current management

I. NATIVE AMERICAN CONCERNS

a. Affected Environment

The Rudnick allotment occupies an area inhabited at contact by Kawaiisu. The Kawaiisu, who had cultural affinities with both California and Great Basin culture areas, occupied a core area that included the Tehachapi Mountains, portions of the Kern River Valley, and the Walker Pass area. Outer areas, probably important seasonally, included the eastern Sierra Canyons, such as Grapevine, Sand, Indian Wells, etc. Linguistic and other evidence indicates that the Kawaiisu may have been in this area for a very long time, at least 2000 years. (Archaeological evidence indicates that the area has been inhabited for at least 6000 to 8000 years.) In support of long habitation of the area Zigmond noted that the Kawaiisu lack migration tales (Zigmond 1972:134), unlike many tribal groups, whose migration tales retell the story of their arrival in their current homeland. The Kawaiisu were hunter-gatherers who practiced no incipient agricultural techniques. A detailed ethnobotany was published by Zigmond in 1972. A summary of Kawaiisu culture is available in Zigmond 1986. Zigmond is the only ethnographer to have studied the Kawaiisu in any depth and they are in general not well represented in the ethnographic literature. They followed a more or less standard seasonal round of collecting plants for foods and other purposes and hunting. Winter houses were circular structures of willow and brush; summer homes may have been little more than brush shade structures. They were skilled basket makers but pottery was seldom made or used by them. Social organization was centered on the family group with little evidence of tribal organization or formal leadership. Their religion is little known but there were a number of powerful Kawaiisu rain or weather shamans, the last of whom, Bob Rabbit, lived in Kelso Valley in the 1940s. The Kawaiisu were probably never a large group; Kroeber (1925) thought the aboriginal population might have been 500; by 1925, there were perhaps 150. Zigmond (1986) thought that all Kawaiisu tribal life had disappeared by the 1960s. "The only criterion for a modern census is language. On this basis there appeared to be about 30 Kawaiisus scattered throughout southern California in 1984...There was only one married couple where both members were Kawaiisu...As a tribal entity the Kawaiisu have ceased to be" (Zigmond 1986:410). While not a federally recognized tribe, the Kawaiisu are recognized by the State of California and a number of people of Kawaiisu descent still live there in Tehachapi and adjacent areas. Recently a Kawaiisu cultural center was established in Tehachapi and Kawaiisu language classes were being taught. There are individuals who still speak the native Kawaiisu language. Because Native Americans used the area contained within the allotment extensively and there are many manifestations of Native American use present, it is probable that descendants of earlier populations will have some concerns about the area.

b. Environmental Consequences

1. Impacts of Proposed Action

Kawaiisu people through the consultation process will identify these impacts.

2. Impacts of Current Management if different than proposed action

Consultation with Native Americans will determine whether or not there may be significant differences in impacts between the proposed action and current management.

3. Impacts of no Grazing

Cessation of grazing would result in cessation of any direct on-going impacts that may be occurring. There may still be effects resulting from permanent damage to resources or areas of concern that will remain even after grazing ceases. These matters must be identified by Native Americans with knowledge of the area.

4. Cumulative Impacts

Grazing has been going on for so long that impacts to Native American values are likely to have a cumulative effect. Some resources of importance may have been eliminated from the environment or seriously degraded, such as populations of native plants. Areas with sacred values may have been permanently compromised by cattle grazing and attendant activity. The combination of grazing and other activities in the area, such as maintenance and use of the Los Angeles Aqueduct, transmission lines and access roads, and recreation and OHV activities may be significant. These matters must be identified by Native Americans with knowledge of the area.

c. Consultation

Consultation with Native Americans is required under the Protocol Agreement and under various laws and executive orders. The Kawaiisu, a state-recognized group who may have traditional concerns that may be affected by cattle grazing on these allotments, have been contacted. Consultation will continue with those who identify concerns about the area. There is no formal Kawaiisu tribal organization but a number of individuals of Kawaiisu descent have been contacted regarding grazing permit renewal.

d. References

Listed at the end of the document

J. RECREATION

a. Affected Environment

Located within this allotment area are the Jawbone Canyon and Dove Springs Open areas. These two designated open areas are the two most popular off-highway vehicle recreation areas managed by the Ridgecrest Field Office. Annual visitation to these locations is estimated to be in the hundreds of thousands per year with people traveling predominantly from southern and central valley regions of California. Visitors to these areas partake in such recreational activities as camping, motorcycle touring, ATV riding, and four-wheel driving.

Additionally within the allotment is roughly 30 miles of the Pacific Crest Trail (PCT), a hiking and equestrian use only trail that stretches for more than 2,000 miles from the Mexico border all the way to Canada. This hiking trail receives hundreds of visitors annually some just out for a day hike to others that plan on hiking the whole 2,000 miles. Also along portions of the northern and western boundaries of the allotment are the Kivah and Bright Star Wilderness areas. Refer to the Wilderness section for details.

The public lands in the allotment also provide a wide range of outdoor recreational opportunities and experiences including backpacking/hiking, horseback riding, mountain biking, camping, hunting upland game birds as well as large mammals, nature study, birding, ATV and motorcycle riding, four-wheel driving, rock hounding/mineral collecting, and target shooting. Almost annually Special Recreation Permits for use within the borders of the allotment have been issued to guides and promoters of both dual sport motorcycle tours and interpretive jeep tours.

b. Environmental Consequences

1. Impacts of Current Management

While participating in casual and permitted recreational pursuits participants may encounter such range improvements as fence lines, closed gates, cattleguards, corrals and water developments as well as encountering cattle on the public lands. While range improvements such as closed gates and cattleguards may delay ones recreational pursuits these impediments do not create a significant impact on recreational opportunities. Conversely the sighting of livestock grazing on the open range is often very intriguing and of interest to visitors and enhances ones recreational experience.

2. Impacts of Proposed Action

The impacts of the Proposed Action are the same as for Current Management

3. Impacts of no Grazing

The elimination of grazing would have little effect on recreational opportunities in the region except for eliminating the experience of seeing cattle on the open range of the “Wild West.”. Until all range improvements were removed recreational participants may still encounter the remnants of these developments which may delay but not prohibit pursuing one’s recreational interest.

4. Cumulative Impacts

No cumulative impacts would be experienced by participants while partaking of recreational opportunities with in the allotment.

K. SOCIAL AND ECONOMIC VALUES

a. Affected Environment

The Rudnick Trustees employ a small number of people but the ranch is a very visible part of the local economy because of the land which is either owned or leased. Furthermore, they have a tradition of having ranched in the area for over 50 years. Throughout the last 20 years the public lands on the allotment have had to accommodate a large increase in recreational activity. Because the Rudnick Trustee holdings are among the largest in the community it is safe to say that they contribute a modest amount of business to local vendors in the community at large. However, it is also safe to say that recreationists and other businesses contribute at least as much to the local economy.

b. Environmental Consequences

1. Impacts of Current Management

The proposed action would have little impact on the local economy. The Rudnick Trustees would not be able to graze during the spring growing season of the year in Sheep Troughs and Dove Springs pastures. This would affect their economic well being to some extent but other pastures remain available for grazing with proper management.

2. Impacts of Proposed Action

The impacts of the Proposed Action are the same as for Current Management

3. Impacts of no Grazing

The No Grazing Alternative would cause the loss of the small number of jobs for which the Rudnicks are responsible and impair local businesses that do business with the Rudnicks. The significance of this is not immediately known or quantifiable. However, it would erode the traditional character of the community that is associated with ranching.

4. Cumulative Impacts

Under the Current Management Alternative and the Proposed Action it is unlikely that there would be cumulative impacts.

Under the no grazing alternative the cumulative impacts would be the same as stated above.

L. SOILS

a. Affected Environment

Soils in the area are generally poorly developed, well drained and coarse textured. The soil depth ranges from deeper alluvial materials to very shallow or non existent over the rocky substrate. Clay and calcium layers occur at various depths in some areas. The soils are susceptible to accelerated erosion from wind and water especially when the surface has been disturbed. Much of the soil has been subject to periodic disturbance due to livestock grazing for 140 years. Additional soil disturbance is occurring as a result of OHV use in the general area plus two OHV open areas and utility Right-of-way maintenance on the two Los Angeles Aqueducts and a power line corridor.

Soil stability was evaluated in the Rudnick Common Allotment as part of the Rangeland Health evaluations. Forty four upland sites were evaluated and the soil surface factor (SSF) in the allotment averaged 11.3 which is in the stable range. One site sampled was in the Jawbone Canyon Open Area which has heavy OHV and camping use. This site had a SSF of 88 which is in the severe range. Soil impacts were noted at a number of sites where cattle were concentrating. Some of these were developed sites at management facilities such as water developments and corrals. Other sites with SSF ratings above 20 (in the slight range) noted recent flood damage.

b. Environmental Consequences

1. Impacts of Current Management

Direct and Indirect Impacts:

Direct impacts to soils would occur through vertical and horizontal displacement and mixing as a result of the grazing activities. Additional direct impacts would include compaction and a reduction in pore space and infiltration rates. Different degrees of impacts would occur to soils from different portions of the grazing operation. Established watering sites and corrals both concentrate the cattle into a small area resulting in nearly continuous trampling impacts to those sites. The trampling has resulted in increased compaction in the soil surface, elimination of vegetative cover, and destruction or disruption of biological soil crusts at these sites. Additional new impacts to soils at the established sites are unlikely. Some developed water sites in the allotment are nonfunctional resulting in the cattle moving away from the unwatered areas toward the remaining sites that have adequate drinking water. The result has been a very uneven use pattern developing with numerous areas having no grazing use while others have heavy extended use. Sometimes the use is concentrated around riparian area for watering. In addition the cattle tend to rest and concentrate on the adjacent stream side benches especially later in the season when the temperatures increase causing soil compaction and reductions in vegetative cover for the soils. All of the identified sites where cattle were a factor in not meeting rangeland health standards were associated with riparian areas. Poor management practices by the ranchers have exasperated the problem. These concentration areas away from developed sites are expected to continue to expand and deteriorate unless changes are made.

As opposed to the intense use at concentration areas including watering and management facilities, the general grazing use is an extensive use with the animals and their hoof action spread over large areas. This use can be best characterized as a series of small impacted spots (hoof marks) with large areas of interspace. This use would not result in the loss of vegetative cover or increased compaction and reduced infiltration rates. It would result in a small increase in wind and /or water erosion potential over the background levels. Wind and water erosion rates are not expected to increase above current levels as a result of the existing situation for the areas away from the concentration areas.

Indirect impacts would occur as increase soil erosion from water and wind. The movement of soils by water during high flow events would occur both on the intense use areas and down associated drainages. The movement would involve both removal and deposition. The deposition could occur on the sites, adjacent to the site, along or in roads and through out the drainage. Increased SSFs were noted at a number of sites where there was evidence of a flood event. As most of the intense use sites are on shallow slopes, the increased water erosion is expected to be negligible and very localized. Wind erosion could occur on disturbed sites during the common high wind events in the spring. Wind erosion would result in losses of small particles from the surface and increased particulate emissions. The wind erosion losses diminish quickly over time as the small particles are lost from the surface. Erosion rates would only slightly exceed natural rates. The current SSF ratings for the allotment would not be expected to change significantly as a result of the existing situation.

Irreversible and Irretrievable commitment of Resources:

Soil losses due to the existing situation are irreversible and irretrievable.

Residual:

The existing situation would result in a partial loss of soils from some specific sites.

Cumulative Impacts:

The existing grazing activities would contribute little to any soil losses occurring on a regional basis. Many of the existing grazing intense use sites have been used for many years and many are being used for OHV and camping uses. Most of the regional erosion problems come from poor drainage on and adjacent to roads and rights-of ways and as a result of OHV activities.

Recommended Mitigation:

These recommended mitigation are also derived from the rangeland health determinations for the Rudnick Common Allotment.

Modify the grazing management in pastures with important riparian areas or fence out riparian areas to achieve the following:

- Avoid grazing in riparian areas during the warm /hot season to reduce concentration on the riparian areas.
- Reduce grazing pressure during the spring growing season to allow recovery of the key species and protective plant cover in the riparian areas.
- Achievement of rangeland health standards.

Develop more specific triggers for riparian zone monitoring along with specific immediate actions necessary if over use is observed, including the following:

- Add all riparian areas, including the adjacent benches, as key areas for monitoring in the Rudnick Common Allotment AMP.
- Add salt grass, sedge, rushes and willows to the key species list along with their proper use factors to the Rudnick Common Allotment AMP. The PUFs would be salt grass (30%), sedge (30%), rushes (30%) and willow (10%).

Implement the AMP especially the following items:

- Repair water developments to encourage cattle to concentrate away from the riparian areas onto previously impacted sites.
- Repair existing pasture and riparian area fences.
- Develop new water sites away from natural water.
- Implement the rotational grazing system.
- Encourage better movement of livestock by the rancher.

2. Impacts of Proposed Action

Direct and Indirect Impacts:

The proposed action's change in season of use or riparian exclosures in pastures with important riparian areas is important in that it addresses fundamental problems with the existing situation. These problems include cattle concentrating and loitering around natural waters and continuous repeated grazing during the critical growing season. The dependence of the cattle to water on the riparian zone would be continue at a lower level with just the season of use restriction. Repairing existing water and developing new waters away from natural waters would eliminate the dependency to water on riparian areas. Fencing would totally exclude cattle from the riparian areas allowing them to recover.

Irreversible and Irretrievable commitment of Resources:

Soil losses due to the existing situation are irreversible and irretrievable.

Residual:

The existing situation would result in a partial loss of soils from some specific sites.

Cumulative Impacts:

The existing grazing activities would contribute little to any soil losses occurring on a regional basis. Many of the existing grazing intense use sites have been used for many years and many are being used for OHV and camping uses. Most of the regional erosion problems come from poor drainage on and adjacent to roads and rights-of ways and as a result of OHV activities.

Recommended Mitigation:

None

3. Impacts of no Grazing

Direct and Indirect Impacts:

Elimination of grazing would eliminate any additional impacts to soils as a result of cattle grazing. Soils at concentration areas would slowly return to a more natural compaction rate, infiltration rate and stability.

Irreversible and Irretrievable commitment of Resources:

Elimination of cattle will eliminate that commitment of soil resources.

Residual:

The same as Direct and Indirect Impacts.

Cumulative Impacts:

Eliminating grazing activities would make little changes in soil losses occurring in the region. Most of the regional erosion problems come from poor drainage on and adjacent to roads, rights-of-ways, recreational uses and OHV.

Recommended Mitigation:

None

M. SPECIAL STATUS PLANTS:

a. Affected Environment

Five special status plant species are known in the Rudnick Common Allotment area. These are Charlotte's phacelia (*Phacelia nashiana*), Spanish Needle onion (*Allium shevockii*), Mojave tarplant (*Hemizonia mohavensis*), Kelso Creek monkeyflower (*Mimulus shevockii*) and Piute Mt. jewel flower (*Streptanthus cordatus var piutensis*). The Spanish Needle onion and Piute Mt. jewel flower occur

outside areas where cattle will access. Charlotte's phacelia occurs on moderate to steep slopes over a wide area along the east side of the Sierras from Rose Valley south to Jawbone Canyon. In the Rudnick Common Allotment, populations have been located on moderate slopes that are susceptible to grazing. The Kelso Creek monkey flower occurs over a limited range along Kelso Creek and near Lake Isabella. Several of the known populations occur in the Rudnick Common Allotment. Survey work for the species is spotty. Additional survey work is needed and it may turn up additional populations of the species.

b. Environmental Consequences

1. Impacts of Current Management:

Direct and Indirect Impacts:

Special status plant populations can be lost if actions result in loss or modification of the habitat necessary for their existence. If habitat losses occur at many sites then the species could be eliminated. Some incidental grazing may occur on one population of Charlotte's phacelia in the Robbers Roost area. This incidental use is not expected to jeopardize the continued existence of this population or the species. Grazing use in the Kelso Creek pasture could adversely impact populations of the Kelso Creek monkey flower. Little is known about the impact of cattle on the monkey flower. The Kelso Creek monkey flower is a low growing annual that only seems to germinate during better than average springs. This may help protect the species as it would be a smaller target and there would be other forage available.

Irreversible and Irrecoverable commitment of Resources:

The existing situation would not result in habitat modifications or direct impacts to many populations of the monkey flower or the phacelia such that the continued existence of the species would be in jeopardy.

Residual:

The same as Direct and Indirect Impacts

Cumulative Impacts:

Grazing has occurred for over 100 years. As a result, no additional cumulative impacts are likely to occur to special status plants.

Recommended Mitigation:

Monitor the special status plant populations for adverse impacts.

2. Impacts of Proposed action:

The proposed action would result in few changes in impacts to special status plants from the existing situation.

3. Impacts of no Action:

No special status plants will be impacted by this alternative.

c. References

Listed at the end of the document

N. WASTE, HAZARDOUS OR SOLID

a. Affected Environment

Detailed surveys of hazardous or solid wastes have not been undertaken on this allotment. BLM maintains no records of reportable spills in the allotment. Although use of motorized vehicles and equipment by the livestock operator may have resulted in periodic and scattered spills or releases of fuel and petroleum products in the allotment, none are documented. For this reason we believe that the proposed action and the alternatives would have no affect on hazardous or solid waste.

O. WATER QUALITY, SURFACE AND GROUND WATER

a. Affected Environment

The Rudnick Common Allotment is located on the western edge of the Mojave Desert. The climate and annual precipitation is typical for the desert environment. Mean annual precipitation rates range from 4 inches near Freeman Junction to a projected 15+ inches along the Sierra Crest. Large variations in yearly precipitation volumes are common. Most of the precipitation comes in the form of rain at the lower elevation and many times snow at the highest elevations. Most of the precipitation falls between November and mid March. Large summer rain events are not common, but can be quite large causing considerable watershed damage when they do occur. As an example, several large summer events occurred in the allotment in 1997. At that time the wash in Red Rock Canyon flowed an estimated 28,000 cubic feet a second and went over bridges. Watershed damage was noted at a number of sites during the rangeland health assessments. A number of canyons drain through the allotment from the Sierra crest with water draining to the northeast into the Indian Wells Valley, southeast into Fremont Valley and northwest into the Kern River. Riparian areas are found in nearly all of the canyons and more or less permanent flowing streams exist in most of the major canyons. The stream flow in the canyons is intermittent in places and tends to disappear at the mouth of the canyons into deep alluvium. A number of seeps and springs occur in most of the canyons. As noted in the appendix, a number of sites have been developed for livestock water. Some livestock watering sites have been developed using water from the L.A. Aqueduct. Groundwater has been developed at eight sites in the allotment. These sites are Highway Well, Horse Canyon Well, Dove Well, Bishop's Claim Well, Jawbone Well, Pinyon Well, Whitney Well, and Kelso Road Well. Currently Dove, Highway and Horse Canyon Wells are nonfunctional due to repeated vandalism of the windmill and tower. Horse Canyon Well has been replaced by a pipeline that runs from Boulder Spring. Jawbone Well is sanded in and has been replaced by a pipeline that runs from Cutterbank Spring on Cross Mountain to the well site. In most cases, the depth to water is less than 200 feet at the well sites.

The U.S. Geological Survey identified portions of three large watersheds in the allotment. These are the Indian Wells-Searles Valley basin, the Antelope-Fremont Valley basin and the South Fork of the Kern River basin. Water flows from Kelso Creek into the south fork of the Kern River. Storm water flows from the remainder of the Rudnick Common Allotment end up in one of two closed watershed

basins. Flows from Kelso Valley, Dove Wash and the Jawbone drainage ends up in Koehn Lake with the remaining flows ending up in China Lake, one of several closed sub-basins within the Indian Wells-Searles Valley basin. The Final Unified Watershed Assessment (1998) classified the three watersheds as category 1 (impaired) low priority watersheds. This classification indicated that this watershed was impaired but of a lower priority to receive Clean Water Action Plan grants from the federal Nonpoint Source Program. Two Los Angeles Aqueducts and a powerline corridor cross the allotment north to south. In addition a Kern County road (Kelso Valley Road) crosses the allotment east to west through Jawbone Canyon and Kelso Valley. The two aqueducts and the Kelso Valley Road have had large erosion problems associated with them. These problems are generally the result of poor drainage design with water being dumped down steep slopes causing large gullies and sedimentation.

The Lahontan and Central Valley Basin Plans identifies beneficial uses (chapter 2) and water quality objectives (chapter 3) for the surface waters in the allotment. The basin plan lists specific beneficial uses as standards to maintain or meet. For many of the sources, the plan states that beneficial uses includes municipal, agricultural, ground water recharge, recreation 1 & 2, warm water fisheries, cold water fisheries and wildlife. The minor wetlands category has an additional beneficial use of freshwater recharge.

The Clean Water Act and the USEPA classify water pollution from rangelands as nonpoint source pollution (NSP). Management of NSP is through a series of management practices called best management practices (BPS). According to the USEPA, “The restoration or protection of designated water uses is the goal of BMP systems designed to minimize the water quality impact of grazing and browsing activities on pasture and range lands.” Management practices can minimize the delivery and transport of pollutants to surface and ground waters. According to the USEPA, management practices control the delivery of NPS to receiving water resources by:

- minimizing pollutants available;
- retarding the transport and/or delivery of pollutants; and/or,
- remediating or intercepting the pollutant before or after it is delivered to the water resource.

The USEPA has produced guidance titled National Management Measures to Control Nonpoint Pollution from Agriculture. In that document section 4E addresses grazing management. The following grazing management measure is taken from that document:

“Manage Rangeland, pasture and other grazing lands to protect water quality and aquatic and riparian habitat by:

1. improving or maintaining the health and vigor of selected plant(s) and maintaining a stable and desired plant community while, at the same time, maintaining or improving water quality and quantity, reducing accelerated soil erosion, and maintaining or improving soil conditions for sustainability of the resources. These objectives should be met through the use of one or more of the following practices:

- a. maintain enough vegetative cover to prevent accelerated soil erosion due to wind and water;

- b. manipulate the intensity, frequency, duration and season of grazing in such a manner that the impacts to vegetation and water quality will be positive;
- c. ensure optimum water infiltration by managing to minimize soil compaction or other detrimental effects;
- d. maintain or improve riparian and upland vegetation;
- e. protect streambanks from erosion;
- f. manage for deposition of fecal material away from water bodies and to enhance nutrient cycling by better manure distribution and increased rate of decomposition; and,
- g. promote ecological and stable plant communities on both upland and bottom lands sites.

2. excluding livestock, where appropriate, and /or controlling livestock access to and use of sensitive areas, such as streambanks, wetlands, estuaries, ponds, lake shores, soils prone to erosion, and riparian zones through the use of one or more of the following practices:

- a. use of improved grazing management systems (e.g. herding) to reduce physical disturbance of soil and vegetation and minimize direct loading of animal waste and sediment to sensitive areas;
- b. installation of alternative drinking water sources;
- c. installation of hardened access points for drinking water sources;
- d. placement of salt and additional shade, including artificial shelters, at locations and distances adequate to protect sensitive areas;
- e. provide stream crossings, where necessary, in areas selected to minimize the impacts of the crossings on water quality and habitat; and,
- f. use of exclusionary practices, such as fencing (conventional and electric), hedgerows, moats and other practices as appropriate

and

3. achieving either of the following on all rangelands, pastures and other grazing lands not addressed above:

- a. apply the planning approach of the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) to implement the grazing land components in accordance with one or more of the following from NRCS: a Grazing Land Resource Management System (RMS); National Range and Pasture Handbook (USDA-NRCS, 1997b); and NRCS Field Office Technical Guide, including NRCS prescribed Grazing 528A;

b. maintain or improve grazing lands in accordance with activity plans or grazing permit requirements established by the Bureau of Land Management, the National Park Service, or the Bureau of Indian Affairs of the U.S. Department of Interior, or the USDA Forest Service; or other federal land manager.”

The text in number 3 above is included in the state of California guidance called California Nonpoint Source Encyclopedia (SWRCB 2004) updated July 2004.

b. Environmental Consequences

1. Impacts of Current Management

Direct and Indirect Impacts:

Range inspections and Rangeland Health Assessments have documented a number of sites with problems affecting water quality in the allotment. Eleven sites were identified that did not meet rangeland health standards. Five of the sites that did not meet standards were a result of livestock use. The sites not meeting standards are likely to contribute directly or indirectly to the degradation of water quality. All the sites not meeting standards were in riparian areas. On some of these sites, cattle use directly in the water was observed. On these sites cattle were contributing sediments, chemical and bacteriological pollutants directly to the water. The opening of the canopy and spreading out of the water also causes increased water temperatures and higher evaporation rates. It is generally recognized that sediment produced by runoff is the most significant pollutant from rangelands. Upland sites that do not meet health standards have less protective cover to slow overland flow and hold sediment in place. All of these factors would cause the water to not meet water quality standards. The existing situation does not represent point source impacts to water quality and no 401 permit is necessary. Impacts from the existing situation represent non-point-source impacts which are controlled by the implementation of Best Management Practices (BMP).

Reduced ground cover on the uplands and destruction of the protective cover in the riparian zones was observed on the Rudnick Common Allotment. Both of these factors can contribute to increased watershed damages during high flow events. In addition, more runoff and less infiltration could result. It is doubtful that grazing use contributed to the watershed damage observed after the 1997 flood event. Water consumption would not exceed 13 acre feet for the grazing season at full stocking rates which is a very small percentage of the water in the area.

Irreversible and Irretrievable commitment of Resources:

Sediments represent soil losses which are very slow to recover. Water losses from the watershed are not recoverable and are not available for plant growth and groundwater recharge.

Residual:

Same as direct impacts

Cumulative Impacts:

Grazing represents only a small portion of the non-point-source pollution in the watershed.

Recommended Mitigation:

Apply best management practices to mitigate water quality problems as follows (these are also included in the Rangeland Health Determinations for the Rudnick Common Allotment):

Modify the grazing management in pastures with important riparian areas or fence out riparian areas to achieve the following:

- Avoid grazing in riparian areas during the warm /hot season to reduce concentration on the riparian areas.
- Reduce grazing pressure during the spring growing season to allow recovery of the key species and protective plant cover in the riparian areas.
- Achievement of rangeland health standards.

Develop more specific triggers for riparian zone monitoring along with specific immediate actions necessary if over use is observed, including the following:

- Add all riparian areas, including the adjacent benches, as key areas for monitoring in the Rudnick Common Allotment AMP.
- Add salt grass, sedge, rushes and willows to the key species list along with their proper use factors to the Rudnick Common Allotment AMP. The PUFs would be salt grass (30%), sedge (30%), rushes (30%) and willow (10%).

Implement the AMP especially the following items:

- Repair water developments to encourage cattle to concentrate away from the riparian areas onto previously impacted sites.
- Repair existing pasture and riparian area fences.
- Develop new water sites away from natural water.
- Implement the rotational grazing system.
- Encourage better movement of livestock by the rancher.

2. Impacts of Proposed Action

A number of items in the proposed action would improve water quality in the Rudnick Common Allotment. The USEPA guidance for nonpoint source pollution from rangeland lists management practices to control the delivery of NPS to receiving water including: minimizing pollutants available; retarding the transport and/or delivery of pollutants; and/or, remediating or intercepting the pollutant before or after it is delivered to the water resource. The proposed action accomplishes these through the application of practices which are USEPA listed best management practices. The proposed action's change in season of use or fence riparian areas is important in that it addresses two fundamental problems with the existing situation. These two problems are cattle concentrating and loitering around natural waters and continuous repeated grazing during the critical growing season in the riparian areas. Elimination of grazing in riparian areas through restrictions in season of use would eliminate grazing during the critical growing season which would improve the riparian vegetation necessary to intercept pollutants. Fencing would eliminate all direct pollution of the water and improve the vegetation necessary to intercept pollutants. The proposed action would arrest further degradation of the riparian zone, allow stabilization and then recovery of concentration areas and allow vegetation recovery, especially key forage species. The total exclusion by fencing would be the preferred action as it totally excludes direct loading of animal waste and sediment to the riparian zone by the cattle and would have the best vegetation recovery rates. This would bring the allotment into compliance with Rangeland Health Standards. The improved vegetation cover would stabilize sites and intercept sediments. The proposed action complies with the USEPA guidance which says to use

one or more of the recommended practices. It also follows both state and USEPA guidance to follow BLM land use plan guidance (standards and guidelines).

Irreversible and Irretrievable commitment of Resources:

Sediments represent soil losses which are very slow to recover.

Residual:

Same as direct impacts

Cumulative Impacts:

Grazing represents only a small portion of the non-point-source pollution in the watersheds and the BMPs are not likely to change the impaired classification for the watersheds.

Recommended Mitigation:

None

3. Impacts of no Grazing

No impacts to water resources would occur due to cattle grazing.

c. References

References listed at the end of the document.

P. WETLANDS/RIPARIAN ZONES

a. Affected Environment

Table- P1 lists most of the important riparian areas on the allotment. The major riparian areas were evaluated under the Extensive Stream Riparian Inventory in 1993 and again in 2001. Many of these same areas were evaluated for PFC as part of the Rangeland Health Assessment. There are riparian areas not on the table and further inventory is needed to compile a comprehensive list. The acreages were determined by multiplying the average width of the riparian zone by the length (obtained from the 1993-94 inventory (BLM, 1994) and McAlexander (2001), BLM Rangeland Health Assessment and from topographic maps). The table also lists those with “not met” problem areas. Almost 20 of the sites evaluated “met” the standards while 5 sites didn’t.

Table P1

Name of Riparian Area	Acres of Riparian	Length of Riparian (ft)	Average Width Riparian (ft)	Rangeland Health Assessment "Met"	Proper Functioning Condition Rating	Comments
Axelton Spring	4.5	1,801	108	Met	PFC	Fenced
Burning Moscow Spring	2.4	10,524	10	Met	Functional At Risk	Spotty riparian areas, narrow channel, drops into canyon crossing private land. OHV impacts
Butterbrecht Canyon	24.32	12,575	84.25	Not Met (1/2 tamarisk) Met (1/2)	Functional At Risk	Cattle south of fenced spring, moderate use, OHVs using canyon bottom. Needs fencing, tamarisk
Cottonwood				Not Met	Functional At Risk	
Dove Spring Canyon	3.6	1,940	80	Not Met	Not Functional	On occasion heavily impacted by cattle and OHVs, no under-story or ground cover in 2002
Frog Spring	.75	992	33.89	Met	PFC	
Hoffman Canyon	2.5	1410	80	Not met	Non Functioning	Tamarisk, cattle grazing, surrounded by private land
Kelso Creek (Rocky Point)	14.3	2,788	224	Met	Functional At Risk	Cattle Use, now fenced
Woolstaff Creek	2.1	1,095	84.3	Met	Functional At Risk	fenced
Kelso Creek (Upstream)	6.4	2,558	108.3	Met	Functional At Risk	Slight cattle use
Kelso Creek (West)	20	5,889	149	Not Rated	PFC	Very infrequent.
Kelso Creek (Mid)	24	4,104	255	Met	Functional At Risk	Some area damaged by cattle grazing.
Nudist Spring	.75	285	60	Met	PFC	Fenced, but small patch outside enclosure
Sage Spring	7.61	3,103	106	Met	Functional At Risk	Heavy cattle grazing south and north of stream in uplands.
Williams Spring	.5	1,000	20	Met	Functional At Risk	Cattle use above and below spring
Willow Spring (spring)	.25	150	30	Met	PFC	Fenced
Willow Spring (pond)	.5	n/a		Not Met	Non- Functional	Heavy cattle grazing, watering site
Totals	114.48	9.5 miles				

Table- 2W, in the Appendix 4, presents additional attributes of these riparian areas. Cattle grazing and OHV activity are impacting some of the riparian vegetation communities. The degree of impact varies. In general, those with the highest ratings have little or no grazing and OHV activity. It should be noted, however, that none were rated "poor". Many areas were Functional- At- Risk and some, such as Butterbrecht Canyon didn't meet the standards because of the presence of tamarisk. OHV activity is a contributing factor in Butterbrecht Canyon. This canyon did have Riparian Condition Ratings of 3.37 and 3.73 for two different reaches, between "good" and "excellent". Dove Spring canyon, on the other hand had ratings of 2 and 2.62 ("fair"), and didn't meet the standards because of trespass OHV and cattle impacts.

Table P2 compares the ratings for 1993 and 2001, also presented in different form in Table 3A in the appendix. About half (4.66 miles) of the 9.5 miles (from table P1) were rated in 2001. Butterbrecht Canyon, Dove Spring Canyon and Nudist Spring were the only areas rated in 1993 though, with “good” areas going from 23% to 42% and “good-excellent” going from 4% to almost 40%. The mileage of these 3 riparian areas went from 2.558 in 1993, to 3.12 in 2001, a half mile increase. Though possibly a difference in the evaluation process, this data suggests that management of grazing and OHV activity through fencing and other management methods would lead to restoration of other riparian areas in the allotment.

In 2001, portions of Kelso Creek were done as well as some smaller areas, both fenced and unfenced. Of the 4.66 miles rated, 30% were in “good-excellent”, 37% in “good”, 27% in “fair- good”, and only 6% in “fair”. The main areas not rated were portions of Kelso Creek, Burning Moscow Spring drainage, Hoffman Canyon, and some of the smaller springs. If the ratings from the 4.66 miles were extrapolated to the 9.5 miles there would be a total of 7.58 miles or almost 80% in “good” and “good-excellent”.

Table P2

Rating Category	Rating	1993 Miles	1993 %	2001 Miles	2001 %	2001 Miles*	2001%*	All miles
1- 1.4	Poor	0	0	0	0	0	0	0
1.5- 1.9	Poor- Fair	0	0	0	0	0	0	0
2.0- 2.4	Fair	1.4	54.7	.3	6.4	.3	9.6	.91
2.5- 2.9	Fair- Good	.47	18.4	1.24	26.6	.33	10.6	1.01
3.0- 3.4	Good	.588	23	1.74	37.4	1.31	42	3.99
3.5- 4.0	Good- Excellent	.1	3.9	1.38	29.6	1.18	37.8	3.59
Total		2.558	100	4.66	100	3.12	100	9.5

* Butterbrecht, Dove, and Nudist Spring, done both in 1993 and 2001.

b. Environmental Consequences

1. Impacts Current Management

Direct and Indirect Impacts

The rotation system will rest the various pastures but within the pastures being grazed livestock will congregate in the riparian areas, especially in the summer months. Vegetation that has grown up during the two year rest will be consumed, ensuring there will continue to be problem “non- met” areas. Grazing in June, July and August will be especially hard on the vegetation, resulting “.in severe negative impact on riparian trees and shrubs (EPA, 1993).”

These “not met” areas would not improve, keeping them from becoming Proper Functioning. It’s likely that those areas with poor ratings would not improve and possible that areas in better condition could decline. Additional descriptions of impacts on riparian resources can be found in the analysis on special status and T&E riparian species. Under the spring-summer grazing strategy, there would be no improvement in the ratings. Using the same percentages for the 4.66 miles for the 9.5 miles there would be 2.83 miles in “good-excellent”, 3.57 in “good”, 2.54 in “fair-good”, and .61 in “fair”.

Table P3

Rating Category	Rating	Mileage	%	All areas Miles
1- 1.4	Poor	0	0	0
1.5- 1.9	Poor- Fair	0	0	0
2.0- 2.4	Fair	.3	6.4	.61
2.5- 2.9	Fair- Good	1.24	26.6	2.54
3.0- 3.4	Good	1.74	37.4	3.57
3.5- 4.0	Good- Excellent	1.38	29.6	2.83
Total		4.66	100	9.5

Proposed Mitigation

1. Riparian areas should be fenced off with water available outside the fence and well away from the riparian zone. Some specific fences have already been built and others are slated for construction (at Kelso Creek, Rocky Point, Williams Spring, Butterbrecht Canyon, Willow Spring, and others). The following areas should be fenced.

- a. Butterbrecht Canyon (about 2 miles, fencing proposed)
- b. Kelso Creek (West- 1 mile)
- c. Kelso Creek (Mid- just under 1 mile)
- d. Kelso Creek (up stream- ½ mile)
- e. Kelso Creek and Woolstaff Creek (¾ mile- in process of being fenced).
- f. Williams Spring (1/8 mile- Project proposed)
- g. Willow Springs pond (Project proposed)

2. Tamarisk should be removed from all riparian areas.

3. These include fencing off problem areas, new waters away from riparian vegetation, removal of tamarisk, planting of native tree species, and reduction of cattle numbers.

4. Other mitigation could include shifting grazing from late spring/summer to winter/early spring.

Residual Impacts

Fencing would reduce the impact to riparian systems, but unless regularly inspected and maintained, cattle would get into the exclosures and impact the riparian vegetation.

Irreversible and Irretrievable Resources

See wildlife/T&E statement.

Cumulative Impact

Human activity has been impacting riparian species beginning with the Native Americans and continuing with the coming of Europeans. The current anthropogenic (human related) impacts (Open Areas, grazing) are far more intense and widespread than the Native American impacts. Climate (floods, drought) adds to the impacts affecting riparian areas on the allotment as well. Grazing in the summer would contribute significantly to the impacts.

2. Impacts of Proposed Action

Direct and Indirect Impacts

Implementing the actions recommended in the Proposed Action would effectively diminish the impacts of grazing to riparian vegetation. As the Proposed Action makes use of a number of projects to manage livestock, including fences and water developments, natural and human activity will cause them to fail during their lifespan. The extent of the impact to the riparian areas will be determined by how quickly the damage can be detected and repaired. Historically this time-frame has ranged from a week or two up to almost a year. Over the ten year life of the permit, we should expect all the fences to be cut or break from natural causes 1- 3 times or more. With ten growing seasons, however, we should have at least 7 growing seasons for the vegetation to develop. The fences on Kelso Creek are the most threatened while the others less so.

The following table (P4) presents the condition ratings for the riparian areas with maximum protection from fencing. Everything would be in the “good” and above range but not excellent due to natural and human factors. Almost 6 miles would be in the “Good-Excellent” category.

Table P4

Rating Category	Current Rating	Current Mileage	Current %	Goal Mileage	Goal %	All areas Miles
1- 1.4	Poor	0	0	0	0	0
1.5- 1.9	Poor- Fair	0	0	0	0	0
2.0- 2.4	Fair	.3	6.4	0	0	0
2.5- 2.9	Fair- Good	1.24	26.6	0	0	0
3.0- 3.4	Good	1.74	37.4	1.75	37.5	3.58
3.5- 4.0	Good- Excellent	1.38	29.6	2.91	62.5	5.97
Total		4.66	100	4.66	100.0	9.55

Proposed Mitigation

No mitigation is listed for the proposed action. The mitigation developed for the Current Management has been incorporated into the Proposed Action. One item that should be considered for inclusion in the Proposed Action is an Inspection and Maintenance protocol. The protocol should specify who will do the inspections and when (yearly? Twice a year? After a flood event?). Maintenance responsibility should be established as well.

Residual Impacts

There would be little residual impact, although, even with the projects in place, natural events and human activity will cause the projects to fail and allow impacts to occur. Maintenance will be key in ensuring that in the long term residual impacts will be held to a minimum.

Irreversible and Irretrievable Resources

None

Cumulative Impact

Human activity has been impacting riparian species beginning with the Native Americans and continuing with the coming of Europeans. The current anthropogenic (human related) impacts (Open Areas, grazing) are far more intense and widespread than the Native American impacts. Climate (floods, drought) adds to the impacts affecting riparian areas on the allotment as well. Grazing in the

summer could contribute to the impacts. Cumulative impacts from grazing under the proposed action would be substantially less than under current management.

3. Impacts No Grazing

Direct and Indirect Impacts

Under this alternative there would be no impacts to riparian vegetation from authorized grazing. Theoretically the table for ratings of the riparian areas would be similar to the Proposed Action table. The riparian areas would still not all fall into the highest category because of other activities. Floods will continue to reduce the rating as will OHV activity, trespass cattle, and human-caused fires.

Proposed Mitigation

No mitigation is proposed for the no-grazing alternative.

Residual Impacts

None

Irreversible and Irretrievable Resources

None

Cumulative Impact

All the activities described for the Proposed Action would occur, but grazing would not.

c. Consultation

Rocky Thompson, California Department of Fish and Game, Region 4
Judy Hohman, U. S. Fish and Wildlife Service, Ventura Office

d. References

Listed at the end of the document

Q. WILD AND SCENIC RIVERS

a. Affected Environment

The proposed action and the alternatives would have no affect wild & scenic rivers because there are no rivers so designated on the allotment.

R. WILDERNESS

a. Affected Environment

Approximately 44,800 acres or 18.5% of the Rudnick Common Allotment lies within wilderness. About 35,200 acres or 14.5% lies within the 88,290 acre Kiavah Wilderness. Another 9,600 acres or 4% lies within the 9,520 acre Bright Star Wilderness.

The Kiavah Wilderness is located at the southern extremity of the Sierra Nevada Mountains and encompasses the eroded hills, canyons, and bajadas of the Scodie Mountains Unit within the Jawbone Butterbrecht ACEC and Sequoia National Forest. A unique mix of plant and animals occurs here as it lies in the transition zone between the Mojave Desert and the Sierra Nevada Mountains. Desert plants such as creosote bush, Joshua tree, burro bush and shadscale may be found in close association with pinyon pine, juniper, grey pine, and canyon oak. There are no known noxious weed populations in the area. Specialized habitats with special status plant species (*Ertter's milkvetch*, *Astragalus artterae*) do occur. Surface streams and riparian communities are found in many of the canyons. These areas fall under special protective management as Unusual Plant Assemblages and are evaluated for Proper Functioning Condition (PFC). The varied vegetation provides habitat for a great diversity of wildlife. Species of note include raptors, the yellow-eared pocket mouse, a variety of lizards, and a number of migrant and resident birds. Vegetation, especially in the riparian areas, is affected by visitor use and authorized activities, such as livestock grazing and wildlife development.

The wilderness is a popular camping, hiking, backpacking, and wildflower viewing area. The Pacific Crest National Scenic Trail runs along the entire backbone of this wilderness from Bird Springs Pass north to Walker Pass. In addition, the countryside is generally open and gentle enough to afford many opportunities for cross-country hiking in canyons and along ridges. Many fine wilderness opportunities for experiencing naturalness, solitude, primitive and unconfined recreation exist throughout the area. However, these opportunities are compromised by the impacts of cattle, particularly on stream and streamside riparian areas in the canyons, and by the large number of OHV intrusions and range developments found throughout the area. Since designation, wilderness management has focused on restoring the area to a more natural and untrammelled state. Initiatives have revolved around the disguising and rehabbing of old vehicle ways and the signing and building of more effective vehicle barriers outside and along the wilderness boundary. More than 35 miles out of a total 70 miles of old vehicle ways have been restored by Student Conservation Association crews. In addition, the wilderness program has built several wing fences, one of which was 1 ½ miles long, and anticipates building at least 3 more, outside and along the wilderness boundary to stop OHV trespass. Inside of the Kiavah Wilderness, management emphasis needs to continue to be placed on eliminating or minimizing the impacts of man and restoring naturalness, wherever feasible.

Currently there are a total of 24 (numbered) range developments in the Kiavah Wilderness for both the Rudnick and Walker Pass allotments. There are also a small number of unidentified fences, wells, and one study site. In the Rudnick Common Allotment, there are 18 existing used and unused range developments inside of the Kiavah Wilderness. All of these developments pre-existed wilderness designation in 1994, but not all were in repair and in use at the time of designation. Of the 18, 11 are currently operative and in-use. They include 4 fences, 1 tank, 3 troughs, 2 pipelines, 4 exclosures, 6 spring developments, and 1 well. These are maintained in a variety of ways, none of which requires motorized access, the use of motorized or mechanized equipment, or any other action normally prohibited under the Wilderness Act. Seven are dysfunctional and two of these are proposed for reconstruction (Cow Heaven Spring Development 5056 on Sequoia and Cow Heaven Tank and Trough 5413 on Ridgecrest BLM). One (the Boulder Springs exclosure fence) is slotted for

reconstruction and expansion to better protect riparian and cultural values on-site. A new drift fence located west of the saddle at Bird Springs Pass and west of the PCT has been proposed to keep cattle in their respective pastures on opposite sides of the pass..

The Bright Star Wilderness is located west of Kelso Valley in the Kelso Mountains contiguous with the Piute Mountain Range in Sequoia National Forest. The wilderness surrounds Kelso Peak and associated drainages to the north, south, and east. A legislated corridor leading to a route on the Sequoia National Forest splits the wilderness into 3 units. The ecosystems of the Mojave Desert, Sierra Nevada, San Joaquin Valley and the Transverse Ranges all collide in Bright Star with spectacular results. Vegetation ranges from dense stands of Joshua trees to pinyon and juniper forests. Specialized habitats with special status plant species occur throughout the Bright Star Wilderness. Many of these sites are associated with unusual soils or a series of site conditions which create unusual habitats, many of which are small, resulting in very small populations for some species. Special status species that occur are: Kelso Creek monkey flower (*Mimulus shevockii*) and Piute Mountain jewel flower (*Streptanthus cordatus* var. *piutensis*). Streams with flourishing riparian communities exist in Cortez and Bright Star canyons, as well as along Kelso Creek. Like those in Kiavah, these riparian communities contain Unusual Plant Assemblages that require special protective management. Willow flycatchers and raptors frequent these areas. The entire wilderness is included in the Jawbone-Butterbrecht Area of Critical Environmental Concern which was set aside for its cultural and wildlife values.

The Bright Star Wilderness is mostly natural and pristine, surrounded by Forest and private land on nearly all sides. Access to the wilderness area through the open vehicle corridor is entirely through private lands. Virtually all vehicle trespass problems occur off of this corridor. While most trespass sites have been successfully barricaded and restored, a few, including a site leading to a cabin continues to be a problem. Several good cattle and foot trails wind along streams and riparian areas in the bottoms of the canyons. These areas can provide excellent opportunities to view wildflowers and experience wilderness, as long as they do not become too heavily-impacted by cattle. The open, rocky and lightly forested ridges above the corridor also provide good hiking with great views. Opportunities for experiencing solitude, naturalness, primitive and unconfined recreation are generally excellent anywhere beyond a ¼ mile of the vehicle corridor, whether you are down in the bottoms of the canyons or up on the ridges.

In Bright Star, the range facilities have no maintenance needs, no motorized access needs, nor are there any sites needing specialized resource protection. There are currently 2 range developments: 1 fence (2 miles) and 1 cattleguard. There are 0 gates, 0 tanks, 0 troughs, and 0 exclosures.

The Rudnick Common Allotment has been moderately to heavily-grazed in the past, with the bulk of the activity centered upon 2 pastures (Cane Canyon and Pinyon Well) used by the Onyx Mountain Cattle Company and 5 pastures used by cattle on a rotational basis (including pastures extending into wilderness such as Canyons and Bird Springs/Kelso Creek) by the Rudnick Estate Trust (Onyx Ranch). Intense use or heavy cattle activity has fairly consistently taken place in riparian corridors and high valleys within wilderness while broader plains areas have seen more moderate usage because of the ability of the cattle to disperse. Well-watered, riparian areas in narrow canyon bottoms in the Kiavah and Bright Star Wildernesses have been the most heavily impacted by cattle grazing. These canyons are Cow Heaven, Sage, and Horse (within the Kiavah Wilderness); Kelso Creek and Cortez Canyons (within the Bright Star Wilderness). Areas surrounding a single-point water source such as a well (Cane Canyon) are also heavily-impacted by concentrated use.

The Onyx Mountain Cattle Company currently holds a permit for a total of 161 (perennial) AUMs per year. The season of use is the spring and early summer (March-July) each year. The Company obtained these AUMs from two former operators of the allotment in 1994. They are the combined total AUMs allotted to these operators at the time of wilderness designation.

Since 2001, the Onyx Mountain Cattle Company has grazed 14-55 cattle per year, using 132-185 AUMs each year. The permit for the Rudnick Estate Trust calls for a total allocation of 7,016 (perennial) AUMs (including 280 AUMs on a small USFS allotment) annually for all pastures. From the 1992-1993 grazing season to the 1994-1995 grazing season, the Trust grazed 24-1106 cattle on these pastures, using 844-6,226 AUMs per year. From 1992 through the 1998/1999 grazing year the AUMs used by the Trust were generally below the number allocated to them (in the range of 2100-2900 per year), except for one year, 1995/1996, when 13,687 ephemeral as well as perennial AUMs were allocated to it. From 1999 through 2003/2004, the Trust has kept 739 cattle grazing on the allotment, using 6,736 AUMs per year.

There are no wilderness management plans for these wilderness areas that address grazing.

b. Environmental Consequences

1. Impacts of Current Management

Cattle-grazing is an authorized but non-conforming use in wilderness. Wilderness values are adversely affected by loss of water quality, loss of vegetative cover, trampling, trailing (as in multiple, braided trails), alteration of streams, loss of wildlife habitat, spring developments and other man-made support structures. Under the Current Management alternative grazing would continue at current (1994) permitted use levels in wilderness. Under this alternative, adverse impacts on naturalness, untrammeledness, aesthetic and scenic qualities of wilderness, specific wilderness resources, and on opportunities for quality primitive and unconfined recreation would continue to occur at approximately the same levels as before. These effects would be most severe in the narrow, well-watered canyons and in valleys at upper elevations, where cattle-use is the most concentrated.

All proposed actions in wilderness involving the use of motorized vehicles, or motorized and mechanized equipment, structures, installations, or any other action normally prohibited under the Wilderness Act will require a separate, project-specific Environmental Assessment with a Minimum Action/ Minimum Tool Analysis. For range structures and projects that are non-functional, an EA will determine first whether it should be replaced, reconstructed, maintained, or removed.

2. Impacts of Proposed Action

The impacts to wilderness of the proposed action are substantially the same as for the Current Management alternative because none of the riparian areas inside wilderness have been identified as areas where rangeland health standards are not being met. As a consequence, the suspension of grazing during the critical spring of growth (3/1-5/31) would not apply to riparian areas inside wilderness. None of the additional proposed enclosure fences, including those along Kelso Creek will be in wilderness. However, the adoption of utilization studies incorporating key riparian forage species and their proper use factors (PUFs) would be applied to better control grazing in riparian areas throughout the allotment including riparian areas in wilderness.

All proposed actions in wilderness involving the use of motorized vehicles, or motorized and mechanized equipment, structures, installations, or any other action normally prohibited under the

Wilderness Act will require a separate, project-specific Environmental Assessment with a Minimum Action/ Minimum Tool Analysis. For range structures and projects that are non-functional, an EA will determine first whether it should be replaced, reconstructed, maintained, or removed.

3. Impacts of no Grazing

The impacts of no grazing on wilderness would be to improve naturalness, untrammeledness, aesthetic and scenic qualities, specific adversely-affected resources, and opportunities for a quality primitive and unconfined recreational experience.

4. Cumulative Impacts

Under the current management and proposed action, adverse impacts would be expected to accrue, particularly in sensitive areas (well-watered, riparian canyons), unless the objectives of rangeland health assessments and proper functioning conditions were consistently met.

Under the no grazing alternative, naturalness and untrammeledness, aesthetic and scenic qualities, resources and opportunities for primitive and unconfined recreation all would be enhanced.

S. WILD HORSES AND BURROS

a. Affected Environment

The proposed action and alternatives would have no affect on wild horses and burros because there are no herd management areas in the allotment.

T. WILDLIFE (T&E)

a. Affected Environment

A diverse wildlife fauna is found within the boundaries of this allotment. Jim Weigand (BLM, 2004) prepared a list for the Jawbone Butterbrecht ACEC OHV grant that covers basically the same area (Table 4A, in appendix 4). These have been broken down to upland, riparian and T&E species for this discussion. The roughly 240,000 acres (163,842 acres public lands and approximately 77,944 acres private lands) of the allotment have a variety of upland communities and special status species. The riparian communities have much less acreage but are extremely important to wildlife. The state and listed species are discussed under Threatened and Endangered species. The allotment has been evaluated and monitored in a number of ways and these are discussed.

Upland Species

1. Small mammals- The rodent and rabbit population fluctuates greatly depending on climate but can be affected by overgrazing, meaning that a “Met” condition would allow these populations to fluctuate “normally”. BLM has determined that it will manage sensitive species to prevent them from becoming listed. The yellow-eared pocket mouse, a BLM sensitive species has been recorded at higher elevation areas and is likely to do well in the areas that “met” range standards. The “not met” areas were not in the range of this species. A variety of bats (see Table 4A, Appendix 4) occur on the allotment. Foraging areas are important for bats, meaning there must be sufficient vegetation to

provide the range of insects, spiders, and other invertebrates needed by the bats. Moths are a favorite food item of the Townsend's big eared bat, a species that could be proposed for listing in the near future. In general, if the upland plant community is meeting the rangeland health standards, it is likely providing sufficient foraging habitat for the bats. There were only 2 problem areas (not met) identified during rangeland health assessments over the allotment while 40- 45 areas were rated as "met". It should be pointed out that most of the sites are in the areas grazed by cattle, and not in the Open areas used by OHVs.

2. Upland bird species- The group includes those that nest in this community, those that feed here (raptors), and those that migrate through and/or winter here (many). All the native bird species on the allotment are protected under the Migratory Bird Treaty Act but some have additional status. Burrowing owls (BLM Sensitive) require a productive vegetative community in the vicinity of their nest (burrows) because they don't forage great distances like other raptors do. They do however prefer shorter vegetation adjacent (5- 10') to their burrows. The LeConte's thrasher is widespread over the allotment and is listed as a BLM Sensitive species. This species needs large shrubs, cactus, or Joshua trees for nesting and a productive vegetative community for foraging. Raptors, as a group use this upland primarily for hunting prey so they need a vegetative community that produces lots of rodents, rabbits, and other food. The prairie falcon, a BLM sensitive species, nests at Robbers Roost and other sites with steep cliff faces and forages over a wide area. A "met" rating for this group indicates that their habitat needs are being met. Of the two "not met" problem areas, one is in an Open area and another was partly affected by a flood event. BLM conducts winter and spring bird monitoring in the Joshua Tree community annually on the allotment and has found large numbers of seed-eating birds in areas with good stands of grass.

3. Reptiles and amphibians- This is a group that generally does well, even under light grazing. The legless lizard is a California species of Special Concern.

4. Large mammals and "game" animals- Mountain lions, bobcats, and coyotes are found throughout the allotment and feed mostly on native prey. Mule deer and black bear are found in the western part of the allotment, both in the lower areas (Kelso Creek) and the higher elevations (Piute Mountains). Deer are hunted under CDFG regulations. The four main species of upland game birds are California quail, Mountain quail, chukar, and mourning dove with wild turkeys at higher elevations. These are mainly ground- nesting birds so there is the potential for crushing by cattle although most of the time nests are placed under shrubs and are avoided by cattle. They tend to range near washes, canyons, hillsides and riparian areas, avoiding the large flats. A "not met" within the areas they frequent would have more impact than one out on the flat.

Riparian associated species.

1. Birds- The majority of special status species associated with riparian vegetative communities are bird species. These are listed in Appendix 4, Table 4A. Nesting birds, especially the special status species require dense foliage at all layers, so that an area that "met" the conditions for the Rangeland Health Assessment may not necessarily meet the needs of for these particular species. The listed species are discussed below. Butterbrecht Canyon, for example, has yellow warblers migrating through it in great numbers but not nesting there in large numbers. Some of the canyons impacted by cattle have a reduction in the food supply (insects) for many nesting and migrating bird species. Of the roughly 9.5 miles and 114 acres (Table 4C in Appendix 4) of riparian habitat evaluated, there were about 20 sites that met and 5 that didn't (20 % of the riparian sites didn't meet standards). The major canyons all had some problem areas, only the small, fenced areas didn't have "not met" areas.

Table 4C, in appendix 4, is a summary of an evaluation done in recently (McAlexander, 2001) on selected riparian areas on the allotment. An observer rated characteristics on a scale of 1 to 4 to get a Riparian Condition Rating. The observer also estimated canopy cover and the average width of the riparian woody zone and the total riparian zone. The observer identified factors in the erosion process and apparent water quality impacts. Generally the higher the rating, the better the habitat will be for birds. The riparian areas were also rated as to “met” and “not met” for Rangeland Health Assessment. Almost 20 sites checked “met” the standards while 5 did not “meet”.

2. Reptiles and amphibians- The riparian areas have a good deal of potential salamander habitat, especially along Kelso Creek (Cunningham, 2003) but no salamanders were found. Cunningham (2003) did find the legless lizard (*Anniella pulchra*) at Butterbredt Spring in cottonwood leaf litter. She also found a Southern alligator lizard along Kelso Creek. These species require good rock and vegetative cover to exist. Litter is important in providing cover for reptiles and amphibians and their diversity increases as the amount of litter and under-story does. It's apparent from the tables that the riparian areas on the allotment had potential habitat but also had OHV and grazing problems in many of the riparian areas. In some cases (Dove Spring) the cattle grazing was not authorized and the cattle were removed when discovered. Properly maintained fences have prevented un-authorized grazing at Axelson Spring and the Audubon Kelso Creek property.

Table T1- Riparian areas surveyed for amphibians.

Name of Riparian Area	Suitable of Habitat for salamanders	Suitable for Frogs	Comments
Burning Moscow Spring	s, ponderosa downed	none	
	Good leaf litter, fine & coarse woody debris		OHV surrounding area, cattle grazing, ANPU found
Dove Spring	Poor	None	Highly disturbed, OHV and Cattle (fenced), trash, shells
Frog Spring	Good	Good – open water in pond	OHV heavy on dirt road next to area, cattle, bull frogs may be a factor in absence of other amphibians, RACA present
Hoffman Canyon (Side Canyons)	Fairly Low		Impacts from cattle apparent.
Horse Canyon	Fairly low - dry		Cattle grazing and trampling
Jawbone Canyon	Fair- some litter		OHV activity
Kelso Creek (Audubon Preserve)	Good – deep rich leaf litter	Good – stream	Fenced, XAVI found
Kelso Creek (Rocky Point)	Good - microhabitats in riparian forest	Good – stream	None identified
Kelso Creek (Mid, south of Audubon)	Good cottonwood-willow forest, w/ leaf litter & coarse woody debris	Good – shallow pools along creek	OHV tracks, shotgun shells, XAVI, HYRE found
Kelso Creek (west)	Good to excellent-many moist microhabitat, fine, coarse woody debris, stones, pine bark habitat		None identified, XAVI, HYRE, ELMU
Nudist Spring	Fairly good- leaf litter, debris		None- fenced, surrounding area cattle and OHV activity
Sage Canyon	Excellent- good leaf		Cattle grazing muddying and trampling the banks,

	litter under oaks, and willows, moist spring habitats, connected with higher Sierra forest communities		stripping some vegetation, HYRE
Tunnel Spring	Fairly good small amount of leaf litter, moist ground cover		Artificial flow, exotic annual plants, old cattle sign

RACA (Bullfrog), XAVI (desert night lizard), HYRE (Pacific tree frog), ELMU (southern alligator lizard), ANPU (Legless lizard)

3. Aquatic Invertebrates- In general, this group requires good quality water with a substrate that allows feeding, reproduction, and other essential processes. *Pyrgulopsis giulianii*, a spring snail, has been collected on the allotment at a spring in Cow Heaven Canyon. (Hershler and Sada, 2002). Hershler (pers. Com., 2000) indicated that the spring snails require good water quality and a specific substrate to survive. Those riparian sites with a “not met” rating and being impacted by cattle trampling that creates shallow, muddy sites with poor water quality would not likely have the snails or other invertebrates. These sites would act as barriers to aquatic species, fragmenting streams, and generally reducing the density and species diversity of this group. Bats, birds and other wildlife that depend on insects for food have been impacted as well.

Threatened or Endangered Species:

Desert tortoise- The desert tortoise is a State and Federal Threatened species. The most recent information on the desert tortoise is found in the Desert Tortoise Recovery Plan Assessment Draft (Tracy, et al, 2004) and the Draft West Mojave Plan (U. S. Bureau of Land Management, 2003). Recent tortoise surveys in this allotment (2003 and 2004) by ECO personnel have established two areas of tortoise occupation (Keith et al, 2004). They found tortoise sign in the north part of the allotment (in the vicinity of Robbers Roost) and the eastern part of the allotment in the vicinity of Red Rock State Park, encompassing about 4% of the area surveyed (31 of 751 plots). They estimated 50 tortoises for the Robbers Roost area and 108 for the Red Rock State Park area. It is likely that additional tortoises occur between these two areas and there are also sightings of tortoises in the western part of the allotment in the Kelso Valley area.

Tortoises have been observed in the washes extending up from the creosote vegetation community and some of these such as Dove Spring and Butterbrecht may function as east-west corridors for tortoises. The two concentrations are Category III habitat- there is no designated Critical Habitat involved. BLM is conducting a Joshua Tree study as well, primarily in the Dove Springs and Bird Spring areas. After two years of study no tortoises or sign have been found in these areas. BLM biologists designated potential tortoise habitat as part of the route designation process for WEMO, and for this allotment an estimated 60- 70,000 acres (about 1/4 of the allotment) is potential habitat.

In general, Tortoise densities across the West Mojave are down by up to 90% but have recovered in some protected locations. The DTNA, for example, was surveyed recently (2004) and the density will probably be over 60 tortoises per square mile. This part of the DTNA is well away from the heavy motorized vehicle use to the west, south and east of the DTNA. Tracy, et al (2004) cited excessive route proliferation as the key reason for the failure of tortoises to rebound elsewhere. The allotment has two Open Areas, Jawbone Canyon and Dove Springs with heavy OHV use on the existing route network, with a lot of non- compliance.

Late February through early May is the only time in which young tortoises may obtain sufficient succulent vegetation, especially forbs, to satisfy their caloric and nutritional needs and to complete rehydration for the entire year. This same winter and spring forage is also most attractive to grazing cattle. Young tortoises have soft shells and are susceptible to crushing. Their first burrows are those abandoned by small rodents and are most easily collapsible under the impacts of cattle traffic. Biologists conducting winter bird surveys in the Dove Spring Open Area and the Bird Spring area have observed large groups of ravens in both areas. The large groups were seen in areas with intense human and cattle activity. Ravens prey on small tortoises so have an impact on tortoise populations.

The information obtained from the Rangeland Health Assessments is helpful in determining if the habitat meets the needs of the tortoise but factors associated with vehicular use may overshadow impacts from cattle grazing. Roughly a quarter of the allotment was set aside as a grazing "exclusion zone" for certain times of the year. The habitat area around Robbers Roost was left open as was the Kelso Valley Area while a large area of blackbrush was included. An adjustment of the boundary could result in a more effective action. An area that "Met" the standards for Rangeland Health would likely be adequate habitat for the desert tortoise. "Not met" areas in the creosote areas would be impacting on tortoises. There were a few problem areas identified.

2. Mohave ground squirrel- The species occurs on the allotment and may be affected by grazing. Mohave ground squirrels require a good diversity of edible shrub species as well as annuals to facilitate reproduction. A grazing system that results in light utilization on the edible shrubs, and leaves an array of annuals with sufficient nutrient value to the squirrel is likely to have only minimum impacts on the population. The --- "not met" areas are problem areas for the squirrels and require an adjustment in grazing.

3. Southwestern willow flycatcher and least Bell's vireo-. The southwestern willow flycatcher requires the "...presence of multi-layered dense riparian habitat dominated by willows (*Salix spp.*) or other riparian tree and shrub species (Sogge et al. 1997)."

In 2001 EDAW (2002), Inc. surveyed a number of riparian areas on the allotment for potential habitat and this information is summarized in the Table 2W. They found over 5 miles of potential riparian corridor for breeding although much of this was marginal. Many of these areas are fenced or proposed to be fenced to control cattle and OHV activity. They found that cattle- grazing was affecting the vegetation at Butterbrecht Canyon, Dove Spring Canyon, and a segment of Kelso Creek. Elsewhere on Kelso Creek, grazing was having only a slight impact. Wilamowski et al (2002) surveyed Kelso Creek, Butterbrecht Canyon, and Axelson Spring and found willow flycatchers using these areas but could not confirm they were nesting. It's unclear if birds are not nesting because the habitat is not yet in optimum condition due to flooding, OHV use, and grazing, or that cattle or some other activity is discouraging the birds from nesting.

Table T2- Habitat suitability for the southwestern willow flycatcher and least Bell's vireo.

Name of Riparian Area	Suitable of LBVI	Suitable for SWFL	Birds Observed 2002	Length in miles suitable habitat	Cattle Use
Axelson Spring	Marginal	Yes	SWFL	0.34	Fenced
Burning Moscow Spring	No	No	None	0	No
Butterbrecht Canyon	Yes	Yes	SWFL	2	Cattle south of fenced spring, moderate use (vegetation visibly affected).
Dove Spring	No (Too small	No	None	0	Heavily impacted by cattle, no under-story

Canyon	and open)				or ground cover. (Pasture Fence)
Kelso Creek (Rocky Point)	Yes	Yes	SWFL	0.5	Fenced
Woolstaff Creek	Marginal	Marginal	None	0.2 marginal	Fenced
Kelso Creek (Upstream)	Yes	Yes		0.5	Slight cattle use
Kelso Creek (West)	Yes	Yes	None	1	Very infrequent.
Kelso Creek (Mid, near Audubon Prpty)	Yes, but low quality	Yes	SWFL	0.8	Some area damaged by cattle grazing. (Partial Fencing)
Nudist Spring	No	Yes	None	0.1	Fenced
Sage Canyon (USFS)	Marginal	No	None	0	Heavy cattle grazing south and north of stream in uplands. US Forest Service
Total				5.44	

b. Environmental Consequences

1. Impacts of Current Management

Direct and Indirect Impacts:

Special Status Species (Upland Species)

Under this alternative, the yellow-eared pocket mouse would continue to do well in those areas that “met” rangeland health standards, while remaining low in numbers in the areas that did not meet standards (two sites). The upland areas in the Sheep Troughs pasture would receive high levels of grazing pressure. With utilization levels determining when cattle should come off, theoretically cattle would not be impacting upland habitat. In reality, cattle will likely be on after utilization levels are exceeded because of the difficulty in determining the exact time when the utilization level is reached.

Bat habitat would be adversely affected due to unprotected riparian areas that produce insects on which bats forage. The habitat of upland game birds, burrowing owls, and tortoises would continue being degraded in the few areas that were not meeting rangeland health standards. Seed-eating birds would be impacted in those areas not meeting, especially impacting wintering flocks of sparrows. Under the continuing management alternative the quality of the habitat may not change a great deal, or at least, would take a long time to recover. The vertical vegetation structure necessary for LeConte’s thrasher nesting would continue to be degraded at the sites that are not meeting health standards. Prairie falcons and other raptors would be indirectly affected by the degradation of the sites that do not meet rangeland health standards. Reptile diversity would be reduced in the “not met” areas.

Special Status Species (riparian species)

Bird species would be adversely affected under current grazing management. Riparian areas of Sheep Troughs Pasture would continue to be degraded by cattle grazing. Hoffman Canyon and Cottonwood Canyon off of Jawbone Canyon would be grazed, and riparian vegetation could be continually degraded. Impacts to birds, salamanders, springsnails, and other riparian species would depend on the condition of riparian habitat. Riparian areas are difficult to monitor closely enough in order to remove cattle at the proper time to prevent habitat degradation.

The “not meeting” sites in Hoffman and Cottonwood may continue to “not meet” health standards over the ten years of the permit. The “mud bogs” of Hoffman Canyon may continue to create problems for the

invertebrates and other species. The ¼ mile of Hoffman and the slightly shorter stretch in Cottonwood may not recover as quickly under this alternative.

Threatened and Endangered Species

There could be direct and indirect impacts to tortoises in the area around Robbers Roost and the area adjacent to Red Rock State Park affecting potentially up to 150 tortoises. Indirect impacts to potential tortoise habitat could be on about 60- 70,000 acres of Category III Tortoise Habitat. The exclusion zone includes areas that have no tortoises; however, cattle are allowed to graze in tortoise habitat in the Robbers Roost area and in Kelso Valley. The Sheep Troughs Pasture has a tortoise population that could be adversely impacted by cattle. Impacts of cattle grazing still occur on roughly 35,000- 40,000 acres of tortoise habitat. Tortoise density is low, reducing the probability of cattle stepping on tortoises or their burrows. Keith et al (2005) found “Tortoise sign was significantly lower on plots with high livestock scat counts.” Further study is needed on the allotment to see if there is link between cattle grazing and the presence/ absence and densities of tortoises.

The BLM will need to carefully monitor impacts of grazing in areas that have tortoise populations. The degree and nature of impacts from cattle grazing are dependent upon several factors including the grazing history, seasons of use, and stocking rates. Potential impacts of grazing on the desert tortoise include:

- 1) Reducing shrub cover (needed for thermal protection and hiding cover) and reducing plant biomass (food);
- 2) Altering species composition since livestock graze selectively on native forbs with high nutritional content;
- 3) Proliferation of non-native grasses (less nutritional value) and reduction of perennial grasses;
- 4) Trampling of tortoises and shelter sites;
- 5) Competition for forage and trampling of key forage items for tortoises. Baby desert tortoises consume germinating annual plants. These small plants are easily trampled by livestock.
- 6) Cattle concentration areas attract ravens which prey on small tortoises.

Native forage has less nutritional value for desert tortoises during drought years. Thus, cattle have a greater impact on the desert tortoise in dry years.

The full recovery of desert shrubs, forbs, and perennial grasses from overgrazing to their ecological potential requires several decades. Tortoise populations likely will respond to improved habitat conditions very slowly because of their low reproductive and recruitment potential.

Impacts to soil and vegetation, important to tortoises, are reduced by the measures incorporated from previous Biological Opinions. Grazing would continue to disturb the biological soil crust, which may recover over time as long as utilization levels are held to those proposed. Impacts to soil and vegetation will be greatest around watering areas.

Impacts to the Mohave ground squirrel would be indirect, in the form of grazing annual plants and shrubs that are important to MGS. With utilization levels held low for those shrub species preferred by the Mohave ground squirrel for forage, the impact would be significantly reduced.

Impacts on the desert tortoise and Mohave ground squirrel would depend on maintaining rangeland health. Distributing cattle and preventing high concentrations in sensitive areas, as well as keeping cattle out of areas where they are not allowed will be difficult under current management.

Impacts to the southwestern willow flycatcher (SWFL) and the least Bell's vireo (LBVI) are primarily indirect. The areas not meeting rangeland health standards in Hoffman and Cottonwood Canyons would take a long time to recover under this alternative.

The Biological Opinion for the southwestern willow flycatcher and least Bell's vireo state that BLM should complete the rangeland health determinations on this allotment and "assess the potential for adverse effects to these birds, and where appropriate, initiate consultation with the Service (Fish and Wildlife Service, 2002)."

Proposed Mitigation

1. Fencing of the remaining 5-6 miles of unfenced riparian areas should be considered where there are "unmet" problem areas. These projects (and others) should be regularly inspected and maintained. BLM should coordinate with the CDFG on fence specifications.
2. Waters should be made functional and maintained away from riparian areas.
3. The riparian areas for all the canyons should continue to be monitored closely and problem areas identified. Cattle should be removed when utilization levels are reached.
4. Tamarisk continues to be a problem in many of the canyons and should be eliminated.
5. BLM should plant native riparian species such as cottonwoods, if not present due to grazing. Data from the rangeland health assessments and other surveys could be used to identify areas for planting.
6. As per the Biological Opinion, BLM should evaluate the implementation of a cowbird control program.
7. BLM should closely monitor the Robber's Roost area where a tortoise population exists. Production of spring annuals should be monitored to alleviate competition between tortoises and cattle. Tortoise populations should also be monitored as per the 2004 hectare plot method. This area is high quality desert tortoise habitat because of increased soil moisture.

Residual Impacts

The 5-6 miles of unfenced riparian habitat could continue to be impacted by grazing, particularly if monitoring of utilization is not done frequently, especially during summer. Willows and other riparian vegetation making up the under-story may be eaten and trampled leaving stretches of low quality habitat. If regular inspection and maintenance of the projects are not done, cattle would get into the exclosures and will impact the riparian zone. Floods, cattle and human activities will break fences so an inspection/maintenance schedule should be developed. Cattle may move to unfenced portions of the canyon if exclosures are built. The problem areas may simply move. The problem areas in upland habitats may continue or take a very long time to "meet" standards. Species associated with these sites may remain in low densities until the sites have improved to meet.

Irreversible and Irretrievable Resources

Grazing has been ongoing for many years so that any wildlife species likely to be lost have already disappeared. These would be primarily aquatic species such as Springsnails, salamanders, possible fish

species, frogs, and others. Riparian habitat may continue to be impacted but has the potential to return in the future with increased protection. Upland habitat is similar but requires significantly more time.

Cumulative Impacts

Cattle-grazing is one impact on upland and riparian species of wildlife. In the Western Mojave desert climate changes significantly from year to year and droughts can last 5 to 10 years. Impacts from human activity, particularly OHV activity, on this allotment have reduced the productivity of the vegetative community. OHV activity can disrupt nesting birds as well, and cause nest failure. Shooting is a problem in certain areas. Picnicking, camping, and parties in riparian zones can disrupt nesting. Collecting wood and cutting down trees takes place and degrades habitat. Human activity has, in fact been ongoing in these canyons for years, with Native Americans utilizing the resources well before Europeans came into the area. Utilization of tortoises for food and ceremonial items has been documented (Schneider et al, 1989).

2 Impacts of Proposed Action

Direct and Indirect Impacts:

Special Status Species (Upland Species)

The range improvements called for in the Proposed Action will assist in the recovery of degraded habitat and help maintain healthy habitat. Grazing would have less of an impact on the upland species than the current management is having. The proposed action also calls for 1 year of rest between uses. Meeting rangeland health standards would be more likely if the pasture is rested every other year. Impacts to upland species are primarily indirect, relating to habitat alteration.

Under this alternative, the yellow-eared pocket mouse would continue to do well within the allotment where rangeland health standards have been met. Managing the cattle to keep utilization down to low levels on brush and grass should see the “met” areas within the range of this species remain “met”.

Bat foraging habitat would be improved. The proposed action provides better monitoring and protection of riparian areas where bats forage for insects. Bat foraging habitat would continue to be healthy in the “met” areas. The two “not met” upland areas would not likely improve due to OHV activity and other factors.

Upland game birds would also benefit from the year of rest between grazing. Burrowing owl habitat outside of the OHV-impacted areas should also improve, as should the vegetative structure necessary for LeConte’s thrasher. The vertical vegetation structure necessary for nesting of LeConte’s thrasher has been degraded in sites that are not meeting rangeland health standards. Prairie falcons and other raptors would be indirectly affected by the degradation of the sites that didn’t meet rangeland health standards. Reptile diversity would be reduced in the “not met” areas.

Special Status Species (riparian species)

The Proposed Action calls for suspension of grazing during the critical spring season of growth (3/1-5/31) in areas where riparian rangeland health standards have not been met. The Proposed Action also establishes utilization studies to include key riparian forage species: saltgrass, sedge, rush, and willow. The riparian projects listed above would enhance riparian habitat and facilitate seasonal management of cattle in these areas. Nine miles of riparian habitat would receive increased management of OHV

and livestock grazing and likely respond with increased cover, structural diversity, and increased vigor. This is an increase of five to six miles over the current management alternative.

The exclosures would reduce impacts of cattle to riparian bird species since vegetation would be enclosed in most cases. We would expect a reduction of the number of areas impacted by grazing, leading to an increase in numbers of birds, salamanders, springsnails, and other riparian species as habitats recover. The riparian vegetative community would be less altered under this alternative, and there would be fewer direct impacts on nesting birds by cattle. The additional rest in the Sheep Troughs Pasture will allow new seedlings and saplings to grow to a height at which they may survive. Cattle may still impact the under-story, but acreage disturbed should be decreased.

There would be a reduction in cattle “camping” in riparian stream bottoms as long as cattle are removed when the utilization levels are met. The sites “not meeting” should improve, and some should “meet” the standards within the ten years that the permit is good for. The “mud bogs” would be reduced in size and number and a few should disappear. With the elimination of “mud bog” areas, invertebrates could re-invading these areas and establish populations the length of the surface water. Both nesting and migrating riparian bird species should expand into the area available for them with the elimination or reduction of the “mud bog” areas. Lengths and acreages of riparian areas are listed in the tables in the Wetland/riparian section and the Appendix.

Nesting bird densities should increase with less grazing pressure on the riparian areas, both from indirect and direct impact to nesting birds. With 5-6 miles (Table 4R) of additional fencing, there could be a noticeable increase in nesting birds. The increase in aquatic insects will provide an increased food supply for many nesting and migrating bird species. The problem areas should be reduced over a 5- 10 year period. The analysis from the Wetland/riparian section of this EA demonstrates that riparian habitat will improve with protection and other changes in management. In 2001 66% of 4.66 miles of riparian habitat was rated from “good” (3.0) to excellent (4.), which, if translated to the 10+ miles estimated total, would mean almost 7 miles of quality habitat could improve. With fencing, this number could approach 9 or 10 miles.

Threatened and Endangered Species

Impacts of grazing on the desert tortoise and the Mohave ground squirrel may be reduced under the Proposed Action. Maintaining utilization levels of perennial plants such as grasses and shrubs would promote these plants as cover, benefiting hatchling and juvenile tortoises, somewhat reducing the impacts from ravens. It is difficult to assess the differences between the current management and the proposed action alternatives. If the proposed action does allow for an improvement in tortoise habitat, the areas between the two higher density areas could support tortoise densities comparable to these two areas. The estimate of 150 tortoises could increase to 3 or 4 times that for the entire area. Impacts on the desert tortoise and Mohave ground squirrel depend on maintaining rangeland health. Distributing cattle and preventing high concentrations in sensitive areas, as well as keeping cattle out of areas where they are not allowed are part of the management under the Proposed Action.

Where known tortoise populations exist, such as in the Robbers Roost area, grazing should be closely monitored to insure that rangeland health standards are met. The same potential impacts from grazing exist under the Proposed Action as under the Current Management These are:

The BLM will need to carefully monitor impacts of grazing in areas that have tortoise populations. The degree and nature of impacts from cattle grazing are dependent upon several factors including the grazing history, seasons of use, and stocking rates. Potential impacts of grazing on the desert tortoise include:

- 1) Reducing shrub cover (needed for thermal protection and hiding cover) and reducing plant biomass (food);
- 2) Altering species composition since livestock graze selectively on native forbs with high nutritional content;
- 3) Proliferation of non-native grasses (less nutritional value) and reduction of perennial grasses;
- 4) Trampling of tortoises and shelter sites;
- 5) Competition for forage and trampling of key forage items for tortoises. Baby desert tortoises consume germinating annual plants. These small plants are easily trampled by livestock.
- 6) Attract ravens to the area, increasing the potential for predation of small tortoises.

Native forage has less nutritional value for desert tortoises during drought years. Thus, cattle have a greater impact on the desert tortoise in dry years. Adverse impacts to soil and vegetation, important to tortoises, are reduced by the measures in the Proposed Action since cattle will be better distributed by drift fences and water sources (range improvements). There would continue to be disturbance to the biological soil crust, which may recover as long as forage utilization levels are held to those proposed. Impacts to soil and vegetation will still be present around watering areas. However, under the proposed riparian exclosures, impacts will be less than under Current Management.

Impacts to the Mohave ground squirrel would be indirect, in the form of grazing annual plants and shrubs that are important to MGS. With utilization levels by cattle held to low levels for those shrub species preferred by the Mohave ground squirrel for forage, the impact would be significantly reduced. The problem areas (“not met”) would be reduced under this alternative and habitat should improve over the 60- 70,000 acres of potential MGS habitat.

Impacts to the southwestern willow flycatcher (SWFL) and the least Bell's vireo (LBVI) are primarily indirect. Problem areas would be reduced in number as long utilization levels are held to low levels and other management actions such as fencing are undertaken. With low utilization levels, grazing on seedlings/saplings should decline, allowing these to form important layers for nesting birds. Birds would possibly nest in those canyons that were rated as potential habitat and marginal habitat. Waters away from the riparian areas and new fences should help, as well.

The Biological Opinion for the southwestern willow flycatcher and least Bell's vireo state that BLM should complete the rangeland health determinations on this allotment and “assess the potential for adverse effects to these birds, and where appropriate, initiate consultation with the Service (Fish and Wildlife Service, 2002).” Impacts will be reduced but would still occur, leading to Consultation at some level.

Under the Proposed Action a cowbird control program would be in place. Reduction of cowbirds would be beneficial to the southwestern willow flycatcher and least Bell's vireo since cowbirds parasitize the nests of these birds. Cowbirds lay their own eggs in the nests of riparian birds, and these birds raise the cowbird's young at the expense of their own young.

Proposed Mitigation:

The mitigation developed for the current management alternative has been incorporated into the Proposed Action alternative and is not listed here. This included the development of an inspection/maintenance protocol or schedule to deal with flood events and human activities.

Residual Impacts

Since floods, cattle, and human activities can break fences, there would continue to be impacts to the riparian habitat from livestock and OHV activity. The problem areas in upland habitats may continue or take a very long time to “meet” standards. Species associated with these sites may remain in low densities until the sites have recovered. Recovery will be enhanced by exclosure fences, drift fences, range improvements that distribute cattle, and resting of pastures. These are all part of the proposed action and should substantially reduce residual impacts.

Irreversible and Irretrievable Resources

These are similar to current management. However, the measures set forth in the proposed action (exclosure fences, drift fences, range improvements that distribute cattle and resting of pastures) will alleviate or prevent irreversible damage to resources.

Cumulative Impacts

Much of this discussion is similar to that of current management. Cattle-grazing is one impact on upland and riparian species of wildlife. Under the proposed action, cumulative impacts from grazing will be less than those under the current management.

3. Impacts of No Grazing

Direct and Indirect Impacts:

Special Status Species (Upland Species)

With no grazing we would expect some of the “not met” areas to change to “met”. The yellow-eared pocket mouse should do better under the No Grazing alternative. Bat foraging habitat should improve as the “not met” sites decrease. Upland game birds would fair similarly to the bats. Burrowing owl habitat outside of the OHV-impacted areas should improve as should the good structure necessary for LeConte’s thrasher. Prairie falcons and other raptors would benefit from the increase in productivity. Reptile diversity would be increase as “not met” areas decrease.

Special Status Species (riparian species)

Bird species would benefit under this alternative. The larger riparian areas should see a reduction in the “not met” areas as long as OHV activity can be managed. Birds, salamanders, Springsnails and other species associated with riparian areas should increase their range. There would be no impacts of cattle disturbing nesting birds but human impacts would continue. There would be increase in the under-story in those areas “not meeting”. Nesting bird densities could increase up to a third in some canyons. Special status birds such as the yellow warbler may nest in Butterbrecht Canyon in greater numbers.

Threatened and Endangered Species

There would be no direct or indirect impacts to tortoises on about 60- 70,000 acres of Category III Tortoise Habitat. The current estimate of 150 tortoises for the two concentration areas would likely expand to 3 to 4 times that number as tortoises move into the ungrazed areas. The grazing exclusion zone has removed cattle from the time of year when conflicts with tortoises would most likely occur.

There would be no disturbance to the biological soil crust from grazing (OHV activity would continue in certain areas). There would be no Impacts to the Mohave ground squirrel. The two “not met” problem areas impacted by OHV activity and may not improve over time.

Impacts to the southwestern willow flycatcher (SWFL) and the least Bell's vireo (LBVI) from grazing would stop. The 5 problem areas should decrease. The willow vegetation and under-story should develop, allowing more potential nesting habitat for the birds.

The Biological Opinion for the southwestern willow flycatcher and least Bell's vireo state that BLM should complete the rangeland health determinations on this allotment and “assess the potential for adverse effects to these birds, and where appropriate, initiate consultation with the Service. (Fish and Wildlife Service, 2002)” No consultation with the Service would be needed.

Proposed Mitigation

None

Residual Impacts

None

Irreversible and Irretrievable Resources

None

Cumulative Impacts

In the Western Mojave desert climate changes significantly from year to year and droughts can last 5 to 10 years. Impacts from human activity, particularly in riparian areas in this allotment can disrupt nesting birds and cause nest failure. OHV activity in the Open Areas and elsewhere has significant impacts on the wildlife resources. Shooting is a problem in certain areas. Picnicking, camping, and parties in riparian zones can disrupt nesting. Collecting wood and cutting down trees takes place and degrades habitat. Human activity has, in fact been ongoing in these canyons for years, with Native Americans utilizing the resources well before Europeans came into the area. Utilization of tortoises for food and ceremonial items has been documented (Schneider et al, 1989). Even without grazing, the above impacts will continue.

c. Consultation

Rocky Thompson, California Department of Fish and Game, Region 5
Judy Hohman, U. S. Fish and Wildlife Service, Ventura, CA

d. References

Listed at the end of the document.

U. VEGETATION (T&E)

a. Affected Environment

The Rudnick Allotment is located at the western edge of the Desert Floristic Province as described in the *Jepson Manual, Higher Plants of California*. It is adjacent to the California Floristic Province and

the Great Basin Floristic Province. This has resulted in components from all three of these provinces occurring in the area. The eastern boundary of the allotment is on the bottom of the Indian Wells Valley. The western boundary of the allotment includes the Sierra Nevada crest, and portions of the Kern River drainage. The valley bottom lies at an elevation of 2400 feet while much of the crest lies above 5,500 feet elevation. The allotment has a number of structurally different vegetation areas. Most of the allotment supports what Sawyer and Keeler-Wolf in *A Manual of California Vegetation* describe as vegetation series (now called alliances) dominated by shrubs. These shrub series typically support an herbaceous layer that may include less than a dozen species of perennial grasses and forbs. In addition the herbaceous layer usually includes an extremely diverse number of annual forbs and up to five species of annual grasses. Portions of the allotment along the western boundary support a California annual grassland type series where most of the vegetation consists of introduced annual grasses and forbs. The higher elevation portions of the allotment support several forest type vegetation series. The forest communities typically have three layers. However, some of the forest type series typically has a dense canopy overhead which greatly diminishes the density of the shrub and herbaceous layers in contrast to the adjacent shrub and grassland communities. The forest (tree) vegetation series includes conifer forests (Jeffery pine), pinyon-juniper woodlands and deciduous oak woodlands. The riparian vegetation series are the most complex in that they can have multiple tree layers in addition to the shrub layer and the herbaceous layer. In addition the riparian zones with free water have an additional layer below the water surface

The vegetation occurs in elevational zones with forest types at the highest elevation progressing through grasslands, high uplands and medium uplands to the low upland sites along the low elevation portions of the allotment. Nearly all of the major canyons contain perennial streams. Over 30 different vegetation series as described in *A Manual of California Vegetation* (John O. Sawyer and Todd Keeler-Wolf) occur in the Rudnick Common Allotment. Topographic and other restrictions preclude livestock use from some of the forest type vegetation series in the allotment.

The Rudnick Common Allotment has a great diversity of vegetation series which is reflective of the great physical diversity in the area. Forty-four health assessments were conducted on upland sites where vegetation attributes were sampled in the Rudnick Common Allotment. Over sixty species of perennial plants were encountered in the upland transects. Several of the vegetation series identified in the allotment are considered transitional. These series include or are dominated by short lived species. According to Sawyer and Keeler-Wolf, these series can be an indicator of past and/or current disturbances. The disturbances can be either man caused (like grazing, OHV use, camping or maintenance on rights-of-ways and roads) or natural (like fire or flood events). Examples of all of these disturbances were observed in the Rudnick Common Allotment. Among the short lived species characteristic of these series is California buckwheat and cheese bush. The creosote bush (*Larrea tridentata*) and Joshua trees (*Yucca brevifolia*) are among the long lived species occurring in the area.

The creosote bush series is one of the most common vegetation series in the allotment. Common perennial species found in the Creosote bush Series include Creosote bush, Burro-bush or Bursage (*Ambrosia dumosa*), Winterfat (*Ceratoides lanata*), Spiny Hop-Sage (*Grayia spinosa*), Desert needlegrass, Indian ricegrass (*Achnatherum (Oryzopsis) hymenoides*) and Varied bluegrass (*Poa secunda*). The Joshua tree series is also found in the allotment. This series is similar to the Creosote Series with the inclusion of emergent Joshua trees. This series typically occurs at the upper edge of the Creosote bush Series where there is more moisture. The Joshua tree woodland was found to be the most productive vegetation series in the CDCA Plan forage inventories.

A common thread to all of the vegetation series is the occurrence of a diverse groundcover of annual plants. The annual (ephemeral) vegetation is extremely variable in biomass production, ground cover

and species composition year to year and site to site. Biomass production is zero in poor years, but can exceed 4000 pounds per acre at the better sites in a good year. More common biomass productions will range between 500 and 1000 pounds per acre. Species composition is tied to germinating conditions. Over 500 species of annual plants occur in the area. Of these, only a few dozen species are of sufficient numbers and production to be important to livestock. These include storks bill or filaree (*Erodium cicutarium*), coreopsis (*Coreopsis bigelovii*), fiddleneck (*Amsinkia spp.*), phacelia (*Phacelia fremontii* and *tanacetifolia*), yellow comet (*Mentzelia spp.*), goldfields (*Lasthenia (chrysostoma) californica*), desert dandelion (*Malacothrix californica*), bottle washer (*Camissonia spp.*), Fremont pincushion (*Chaenactis fremontii*), gillia (*Gillia spp.*), for-get-me-not (*Cryptantha spp.*), desert trumpet, (*Eriogonum inflatum*), mustard (*Brassica spp.*), little golden poppy (*Eschscholtzia minutiflora*), California poppy (*Eschscholtzia californica*), Arabian grass (*Schismus arabicus*), cheat grass (*Bromus tectorum*) and red brome (*Bromus (rubens) madritensis Ssp. rubens*) The annual grasses (mostly introduced) will germinate under much cooler conditions than the broad-leaved forbs. Along the western edge of the allotment in Kelso Valley and along Kelso Creek, the annual grasses dominate the vegetation in what is called a California annual grassland vegetation series. Many of the forbs are showy wildflowers. A number of sites in the mountains provide sheltered sites which provide the warm moist conditions necessary for wildflower germination

Most plants in the allotment are growing-renewable resources which can tolerate some level of use on a sustained basis. Annual (ephemeral) plant species are the most tolerant of grazing. They will continue to thrive as long as they have been allowed to set seed and the site has not been unduly modified. Many of the annuals can be completely consumed once the seed has dropped although California annual grassland rangelands are generally managed by maintaining a minimum mulch layer. The perennial plants have different needs which makes them more susceptible to grazing. Much of the perennial plant's production is directed at maintenance of energy reserves which are necessary to sustain future years' initial growth and flowering. Of secondary importance is the production of seeds. This means that perennial plants need to maintain an adequate level of photosynthetic processes through the year until they go dormant. Grazing removes photosynthetic material and stored energy from plants. The amount of material that can be removed from a plant depends upon the species, the time of year, overall health of the plant and growing conditions (soil moisture and nutrients). This amount of a perennial plant that can be safely removed on a sustained basis is referred to as the proper use factor (PUF). It is expressed as a percent of the current year's growth that can be removed on a sustained basis. Each species has its own PUF. These can run from 50% for some grass species to 10% or less for some shrub species. These PUFs were developed for more average years and should be considered excessive in draught years. The CDCA Plan and the Rudnick Common Allotment Management Plan (AMP) contain recommended PUFs and guidance that exceedances of the PUFs would lead to moving or removing of livestock.

During the health assessments it was noted that there were widespread adverse impacts to the herbaceous layer close to concentration areas. One of the upland sites not meeting standards noted a lack of perennial grasses.

The California Desert Conservation Area Plan and Environmental Impact Statement addressed cattle grazing in the Rudnick Common Allotment. Among the grazing issues addressed was the estimated forage production, allocations of forage, and limits on grazing use (proper use factors). The CDCA Plan estimated the perennial forage production to be approximately 9193 AUMs. Over 25% of the forage was reserved by the Plan for wildlife, steep slope exclusions and condition improvement. As a result of the CDCA Plan, the perennial forage allocation was reduced from 26,210 AUMs to 6,896 AUMs with provisions for ephemeral allocations.

The range condition in the allotment was rated to be in fair condition reflecting heavy impacts to perennial grasses and shrubs and riparian areas. The fair rating is likely the result of over 130 years of grazing with no regulation prior to the Taylor Grazing Act (1934) and over-allocations prior to the CDCA Plan (1980). In the 60 years prior to 1934, large herds of both cattle and sheep used the area. Some historical records indicate that over 20,000 head of cattle and nearly 1,000,000 head of sheep used the area during the early years.

Key forage species were established in the AMP for the Rudnick Common Allotment. They include indian ricegrass, desert needlegrass, varied bluegrass, squirreltail (*Elymus elymoides ssp. elymoides*), fourwing saltbrush (*Atriplex canescens*), winterfat (*Krascheninnikovia (Eurotia) lanata*) and spiny hop-sage (*Grayia spinosa*).

b. Environmental Consequences

1. Impacts of Current Management

Direct and Indirect Impacts:

Livestock use impacts vegetation directly through both removal by grazing and/or browsing and by trampling. A number of factors affect the impact of cattle on vegetation. These factors include (1) vegetation characteristics such as palatability of the plants, which varies seasonally, the response of the plant to grazing (increaser, decreaser or invader), (an invader species is any plant native or non native that tends to occupy a site in increased numbers and is not desirable), phenology, the physical characteristics of the plant, distribution of the plants and abundance of desirable plants, (2) factors which affect accessibility such as slopes, distance from water and terrain, (3) grazing animal characteristics such as aggressiveness in working steep terrain, nutritional needs and preference for certain species, and (4) management factors such as choice of livestock type, management structures, moving animals, season of use, stocking rates and the use of salt and other supplements. Indirect impacts to vegetation occurs through the modification of the rangeland both biologically and physically which may change dominance, eliminate some species, change germination conditions, remove sheltering, reduce seedling survival and allow invasive weeds to encroach into the area.

Short and long term monitoring along with Rangeland Health assessments, compliance checks and various documents have noted a number of grazing impacts in the Rudnick Common Allotment. The CDCA Plan and the Rudnick Common Allotment AMP both discuss range conditions in the allotment. The CDCA plan classified the allotment as fair condition. According to the CDCA Plan, areas in fair condition would exhibit the following characteristics:

- “Decreasers show low vigor with remnant populations occurring in sheltered areas.
- Invaders are common, increasers are expanding.
- Accelerated erosion evident but not common.
- Cover tending to be reduced.
- Production is 25-50 percent of potential.”

The CDCA Plan explained the above terms as follows:

“Certain forage plants are useful as indicators of condition by their characteristic response to grazing pressure. “Decreasers” reduce in composition under heavy grazing pressure. “Increasers” multiply in composition under heavy grazing pressure. When conditions appreciably deteriorate, the less-desirable plants or “invader species” become more abundant.”

The condition rating system used at the time of the CDCA Plan is no longer used, but, the observations that led to the classification are still valid. The rangeland health assessments conducted on the Rudnick Common Allotment also noted some of the same observations as those from the CDCA Plan. Although none of the upland sites were impacted enough to not meet range health standards, many of the notes indicated lower vigor and cover on the key species. Both the CDCA Plan and the AMP have management objectives to improve the cover and vigor of the key species. At the current time, the management objectives for the allotment have not been met and are not likely to be met without changes in management actions.

Poor distribution of cattle in the Allotment has been noted as a key issue. The observations of cattle movements and vegetation indicates that cattle tend to concentrate near water. Utilization studies and Rangeland Health assessments both noted this problem. The Health assessments noted a lack of key species, poor reproduction and trampled vegetation at riparian sites. As a result, of the twelve riparian sites assessed, five were judged to not meet Rangeland Health Standards due to cattle use. A number of factors contribute to the problems. These included a natural preference of the cattle for grazing the key species, grazing the same areas every year during the spring growing season, heavier stocking during the spring growing season, the tendency of the cattle to concentrate and stay near water during the warm season, a total dependency of the cattle to water on the stream due to nonfunctional water developments and season long grazing at the same site with little herding. Under the current situation, continued degradation of concentration areas, especially those near water, will occur in the allotment.

Irreversible and Irretrievable commitment of Resources:

The vegetation removed by grazing is renewable on a sustained basis at moderate grazing levels. Heavy use sites could start recovery if the impacting uses are modified or removed. This recovery could result in functional stable sites within 10 years. Recovered sites may or may not ever resemble previous vegetation composition

Residual:

There would be continued utilization of renewable vegetation resources.

Cumulative Impacts:

Riparian corridor vegetation is a community of limited distribution in the region. Continued overuse of the community in the Rudnick Common Allotment would be of great importance on an overall basis in the region.

Recommended Mitigation:

These recommended mitigation are also derived from the rangeland health determinations for the Rudnick Common Allotment.

- Modify the grazing management in pastures with important riparian areas or fence out riparian areas to achieve the following:
 - Avoid grazing in riparian areas during the warm /hot season to reduce concentration on the riparian areas.

- Reduce grazing pressure during the spring growing season to allow recovery of the key species and protective plant cover in the riparian areas.
- Achieve rangeland health standards.

Develop more specific triggers for riparian zone monitoring along with specific immediate actions necessary if over use is observed, including the following:

- Add all riparian areas, including the adjacent benches, as key areas for monitoring in the Rudnick Common Allotment AMP.
- Add salt grass, sedge, rushes and willows to the key species list along with their proper use factors to the Rudnick Common Allotment AMP. The PUFs would be salt grass (30%), sedge (30%), rushes (30%) and willow (10%).

Implement the AMP especially the following items:

- Repair water developments to encourage cattle to concentrate away from the riparian areas onto previously impacted sites.
- Repair existing pasture and riparian area fences.
- Develop new water sites away from natural water.
- Implement the rotational grazing system.
- Encourage better movement of livestock by the rancher.

2. Impacts of Proposed Action

The proposed action's change in season of use or riparian exclosures in pastures with important riparian areas is important in that it addresses fundamental problems with the existing situation. These problems include cattle concentrating and loitering around natural waters and continuous repeated grazing during the critical growing season. The dependence of the cattle to water on the riparian zone would be continue at a lower level with just the season of use restriction. Repairing existing water and developing new waters away from natural waters would eliminate the dependency to water on riparian areas. Fencing would totally exclude cattle from the riparian areas allowing them to recover. . The better distribution of cattle away from watering areas and seasonal rest would even out the use of forage in the allotment. The upland portion of the allotment constitutes a majority of the allotment and contain a majority of the forage on the allotment. It is expected that the use on the upland areas would remain within CDCA Plan guidelines and the overused sites would start recovery under this alternative.

Irreversible and Irretrievable commitment of Resources:

The vegetation removed by grazing is renewable on a sustained basis at moderate grazing levels. Heavy use sites would start recovery when the impacting uses are modified or removed. This recovery could result in functional stable sites within 10 years. Recovered sites may or may not ever resemble previous vegetation composition

Residual:

There would be continued utilization of renewable vegetation resources.

Cumulative Impacts

Riparian corridor vegetation is a community of limited distribution in the region. Recovery of the community in the Rudnick Common Allotment would be of great importance on an overall basis in the region.

Recommended Mitigation:

None

3. Impacts of no Grazing

Direct and Indirect Impacts:

No annual or perennial vegetation would be trampled or removed by cattle. There would not be any expected large scale changes in vegetation composition on an overall basis. Cover and vigor of key species would increase. Standing Biomass levels could increase. Additional biomass could increase the incidence and/or intensity of fire. Changes would occur at high use site especially those sites that have not met Rangeland Health Standards. These sites would become functional and physically stable and later vegetation recovery would occur. Full recovery may not include matching the exact original vegetation.

Irreversible and Irretrievable commitment of Resources:

With no grazing there would be no use of vegetation.

Residual:

The same as Direct and Indirect Impacts

Cumulative Impacts:

Grazing would cease to contribute to impacts to vegetation in the Rudnick Common Allotment. There would continue to be human and natural impacts to vegetation at site specific sites. In some areas camping and OHV related impacts could replace cattle impacts.

Recommended Mitigation:

Develop and implement rehabilitation and protection for the developed sites to aid recovery.

d. References

Listed at the end of the document.

CHAPTER 4:

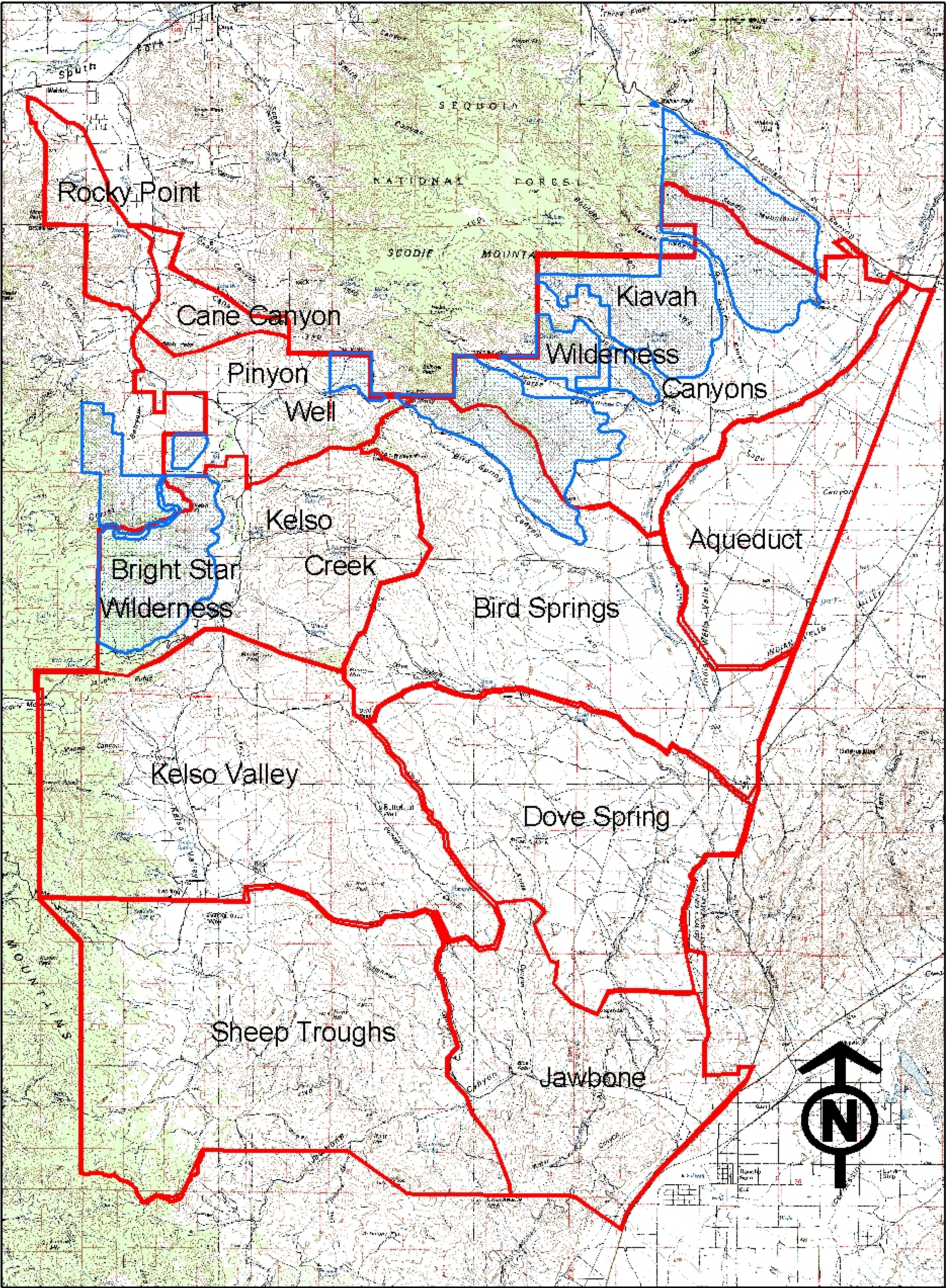
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APPENDIX 1
ALLOTMENT MAP

Rudnick Common Allotment: Sheep & Cattle



APPENDIX 2

PROPER USE FACTORS
FOR KEY FORAGE SPECIES
USED IN UTILIZATION MONITORING

Proper Use Factors (P.U.F.) for Key Forage Species in the Rudnick Allotment

	P.U.F.	Forage Importance Index
I. Perennial Shrubs		
1. <u>Artemisia spinescens</u> , Budsage	20%	0.2
2. <u>Atriplex canescens</u> , Four Wing Saltbush	40%	0.4
3. <u>Ephedra nevadensis</u> , Nevada Joint Fir	30%	0.3
4. <u>Grayia spinosa</u> , Spiny Hopsage	30%	0.3
5. <u>Krascheninnikovia lanata</u> , Winterfat/White Sage	40%	0.4
6. <u>Menodora spinescens</u> , Spiny menodora	20%	0.2
II. Forbs		
7. <u>Mirabilis bigelovii</u> , Wishbone Bush	40%	0.4
8. <u>Sphaeralcea ambigua</u> , Desert Mallow	40%	0.4
III. Grasses		
9. <u>Distichilis spicata</u> , Saltgrass	30%	0.3
10. <u>Hilaria jamesii</u> , Galleta Grass	50%	0.5
11. <u>Hilaria rigida</u> , Big Galleta Grass	40%	0.4
12. <u>Oryzopsis hymenoides</u> , Indian Rice Grass	50%	0.5
13. <u>Poa scabrella</u> , Pine Bluegrass	50%	0.5
14. <u>Sitanion hystrix</u> , Squirrel Tail Grass	40%	0.4
15. <u>Stipa speciosa</u> , Desert Needlegrass	50%	0.5

*Appendix XIII, Final Environmental Impact Statement and Proposed Plan, CDCA Plan, BLM, 9/1980, pp 64-76.

APPENDIX 3
RANGE IMPROVEMENTS

Rudnick Common Allotment Range Improvements

Project Name, and Number	Location (T. R. S.)	Condition & Comments	Necessary Action
Nicolls Spring, 0	T.26S, R.34E, S24	Functional	
Weldon Quad Drift Fence, 0	T.26S, R.35E, S30	Functional	
Horse Canyon Spring Development, 5001	T.27S, R.36E, S	Functional	
Western Spring, 5006	T.29S, R.36E, S6	Functional	
Colt Spring Development, 5007	T.27S, R.36E, S	Functional	
Butterbredt Spring Development, 5021	T.29S, R.36E, S34	Functional	
Cowboy Spring, 5023	T.30S, R.36E, S23	Non-functional	Reconstruct to improve livestock distribution
Sage Canyon Spring Development, 5030	T.27S, R.37E, S	Functional	
Shoemaker Spring Development, 5031	T.28S, R.35E, S12	Functional	
Boulder Spring, 5032	T.27S, R.37E, S18	Functional	Fence to protect Archaeologic Site
Rock Spring and Trough, 5033	T.27S, R.37E, S21	N/A	
Quail Spring, 5047	T.29S, R.35E, S29	Functional	
Cow Heaven Spring Development, 5056	T.27S, R.37E, S5	Non-functional	Reconstruct to improve livestock distribution
Burning Moscow Spring Development, 5069	T.28S, R.35E, S30	Non-functional	Remove
Sageland Spring 5071	T 28S, R35E, S21	Functional	
Nudest Spring Development, 5077	T.30S, R.37E, S8	Functional	
Dove Spring Development, 5078	T.28S, R.36E, S33	Functional	
Willow Spring, 5081	T.28S, R.35E, S24	Functional	
Kelso Valley (Whitney) Well, 5202	T.29S, R.35E, S8	Non-functional	Reconstruct to improve livestock distribution
Dove Well & Storage, 5207	T.28S, R.36E, S32	Non-functional	Reconstruct to improve livestock distribution

Kelso Road Well, 5208	T.29S, R.35E, S26	Functional	
Horse Canyon Well, 5213	T.27S, R.35E, S24	Functional	
Horse Canyon Well Development, 5215	T.27S, R.37E, S30	Functional	
Jawbone Canyon Well Development, 5218	T.30S, R.36E, S28	Non-functional	
Butterbredt Well & Reservoir, 5230	T.29S, R.36E, S17	Non-functional	Reconstruct to improve livestock distribution
Bishop's Claim Well, 5231	T.29S, R.37E, S30	Functional	
LADPW Well #1, 5232	T.28S, R.37E, S10	N/A	
Highway Well, Pipeline, & Trough, 5233	T.28S, R.37E, S10	Non-functional	Reconstruct to improve livestock distribution
Bishop's Claim Well Development, 5242	T.29S, R.37E, S30	Non-functional	Needs a trough
Quail Spring Storage, 5276	T.29S, R.35E, S29	Functional	
Jawbone Canyon Well, Tanks, & Trough, 5287	T.30S, R.35E, S28	Functional	
Whitney Well, Storage, & Troughs, 5289	T.29S, R.35E, S8	Non-functional	Reconstruct to improve livestock distribution
Road Well Storage & Trough, 5290	T.29S, R.35E, S26	Functional	
Shoemaker Tank & Trough, 5291	T.28S, R.36E, S8	Functional	
Highway Well Tank, 5292	N/A	Non-functional	Reconstruct to improve livestock distribution
Pinyon Well Reservoir, 5296	T.27S, R.35E, S24	Functional	
Quail Spring Pipeline, 5335	T.29S, R.35E, S29	Functional	
Cowboy Spring Pipeline & Trough, 5337	T.30S, R.36E, S23	Non-functional	Repair to improve cattle distribution
Jawbone Canyon Well, 5345	T.30S, R.36E, S28	Functional	

Pinyon Well Storage Reconstruction, 5356	T.27S, R.35E, S24	Non-functional	
Pinyon Well Pipeline & Trough, 5369	T.27S, R.35E, S24	Functional	
Bishop Conduit Trough, 5371	T.30S, R.37E, S6	Functional	
Gold Peak Well Pipeline & Trough, 5374	T.29S, R.36E, S1	Non-functional	On private land and public land, Repair to improve cattle distribution
Bird Spring Pipeline, 5388	T.28S, R.36E, S14	N/A	Extend southeast to improve distribution of livestock
Lower Dove Springs Pipeline, 5389	T.29S, 37E, S3	N/A	Repair to carry water to Gold Peak trough, assure distribution of cattle.
Boulder Canyon Pipeline, 5390	T.27S, R.37E, S32	Functional	Extend southwest to improve distribution of livestock
Cow Heaven Pipeline, 5391	T.27S, R.37E, S5	Functional	
Butterbrecht Pipeline Development, 5404	T.29S, R.36E, S7	Functional	
Shoemaker Pipeline, 5406	T.28S, R.35E, S12	N/A	
Willow Spring Pipeline & Trough, 5409	T.28S, R.35E, S24	Functional	
Cow Heaven Tanks & Troughs, 5413	T.27S, R.37E, S	Non-functiona	Reconstruct to improve livestock distribution
Rankin Pipeline & Trough, 5429	T.27S, R.37E, S25	Functional	Extend siphon to assure better water supply & improve livestock distribution
Double Syphon Pipeline & Trough, 5430	T.27S, R.37E, S33	N/A	Extend siphon to assure better water supply and improve livestock distribution
Little Syphon Pipeline & Trough, 5431	T.28S, R.37E, S17	Good	Extend siphon to assure better water supply and improve livestock distribution
Section 32 Syphon, 5432	T.28S, R.37E, S32	Non-functional	Repair to improve cattle distribution
Section 17 Syphon, 5434	T.29S, R.37E, S17	Functional	Extend siphon to assure better water supply and improve livestock distribution
Jawbone Canyon Drift Fence, 5475	T.30S, R.36E, S24	Non-functional	Remove
Jawbone-Redrock Fence, Gates, & C.G., 5490	T.29S, R.37E, S11	Non-functional	Repair

Lower Jawbone Canyon Fence, 5493	T.30S, R.37E, S22	Functional	
Soldier Well Drift Fence & Gates, 5501	T.27S, R.38E, S7	Functional	
Freeman Aqueduct Fence, 5514	T.27S, R.37E, S25	Functional	
Bird Spring Canyon Fence, 5515	T.28S, R.37E, S1	Functional	
Dove Springs Canyon Fence, 5519	N/A	Functional	
Freeman Junction Drift Fence & Gates, 5522	T.27S, R.38E, S8	Functional	
Rock Point Fence, 5524	N/A	N/A	Proposed, never built, --- remove from files
New Soldier Well Drift Fence, 5529	T.27S, R.37E, S1	Functional	
Dove Springs Fence, 5531	T.29S, R.36E, S6	Functional	
San Antonio Fence, 5532	T.29S, R.36E, S6	Functional	
Butterbrecht Cyn, Fence 5533	T.29S, R.36E, S6	N/A	Proposed to better distribute cattle
Dove Springs Pass Drift Fences, 5534	T.27S, R.36E, S29	N/A	Proposed to better distribute cattle
Kelso Road Fence, 5535	N/A	N/A	Remove from files, exists under a different name
Hoffman Summit Fence (& Cattle Guard?), 5536	T.26S, R.35E, S19	N/A	
Onyx Drift Fence & Cattle Guard, 5537	T.27S, R.35E, S28	Functional	
Rudnick Enclosures, 5538	T.28S, R.36E, S3	N/A	
Frog Pass Drift Fence, 5542	N/A	*N/A	Proposed --- Remove from files. Exists under a different name
Pinyon Well Pasture Fence, 5543	T.27S, R.35E, S26	N/A	
Bird Springs Pass Drift Fence, 5554	N/A	*N/A	Proposed ---Protect vegetation and distribute cattle.
Lower Jawbone Guard, 5563	T.30S, R.37E, S21	N/A	
Boulder Springs	T.27S, R.37E, S18	N/A	Proposed ---Protect archaeological site

Fence, 5567			
Linebarger Fence, 5568	T.28S, R.37E, S33	N/A	
Soldier Wells Corral, 5576	T.27S, R.37E, S1	Functional	
Shorthorn (Little Syphon) Corral, 5577	T.28S, R.37E, S17	Functional	
Kelso Valley Holding Corral, 5578	T.29S, R.35E, S8	Functional	
Dove Spring Holding Corral, 5580	T.28S, R.36E, S33	Functional	
Kelso Road Well Corral, 5587	T.27S, R.35E, S26	Non-functional	
Linebarger Holding Corral, 5592	T.28S, R.37E, S28	Functional	
Sageland Holding Corral, 5596	T.28S, R.35E, S21	Functional	
Alexander Holding Corral, 5600	T.28S, R.36E, S14	Functional	
Horse Canyon Corral, 5609	T.27S, R.37E, S30	Non-functional	
Pinyon Well Corral, 5618	T.27S, R.35E, S24	Functional	
Sugarloaf Cattle Guard, 5628	T.30S, R.36E, S7	Non-functional	Clean
Jawbone Canyon Drift Fence & C.G., 5630	T.30S, R.36E, S24	Non-functional	Remove
Jawbone-Redrock Cattle Guard #1, 5635	T.29S, R.37E, S14	Functional	
Jawbone-Redrock Cattle Guard #2, 5643	T.29S, R.37E, S22	Functional	
Linebarger North Cattle Guard, 5645	T.28S, R.37E, S28	Functional	
Dove Spring Cattle Guard #1, 5646	T.28S, R.37E, S10	Functional	
Lower Dove Spring Cattle Guard, 5647	T.29S, R.37E, S15	Functional	
Dove Spring Cattle Guard #1, 5648	T.29S, R.37E, S9	Non- functional	Reconstruct to improve distribution of livestock
Bird Springs Fence	T.28S, R.37E, S8	Functional	

Cattle Guard #1, 5652			
Jawbone Canyon Road Cattle Guard, 5654	T.29S, R.36E, S33	Non-functional	Reconstruct to improves distribution of livestock
Bird Springs Canyon Cattle Guard #2, 5655	T.28S, R.37E, S7	Functional	
Rankin Cattle Guard, 5660	T.27S, R.37E, S25	Non-functional	
Horse Canyon Road Cattle Guard, 5661	T.28S, R.37E, S5	Functional	
Linebarger East Cattle Guard, 5662	T.28S, R.37E, S26	Functional	Raise to improve distribution of livestock
Lower Jawbone Cattle Guard #2, 5666	T.30S, R.37E, S28	Non-functional	
Dove Spring Cattle Guard #3, 5667	T.29S, R.37E, S4	Unknown	
Virginia Cattle Guard & Gate, 5668	T.28S, R.36E, S33	Functional	
Dove Well Cattle Guard, 5669	T.28S, R.36E, S32	Functional	
Gold Peak Cattle Guard #1, 5671	T.29S, R.36E, S6	Functional	
Butterbrecht Cattle Guard #1, 5676	T.29S, R.35E, S1	N/A	Proposed for better distribution of cattle
Pinyon Well Pasture Cattle Guard, 5680	T.27S, R.35E, S26	N/A	Proposed, may not need
Butterbrecht Cattle Guard #2, 5681	T.29S, R.36E, S33	Non-functional	Clean regularly to improve livestock distribution
Freeman Aqueduct Cattle Guard #2, 5684	T.27S, R.38E, S7	Functional	
Jawbone-Redrock Fence Cattle Guard #3, 5686	T.30S, R.37E, S4	Functional	
Jawbone Storage Cattle Guard, 5687	T.30S, R.37E, S28	N/A	
Jawbone-Redrock Fence Cattle-Guard #4 5693	T.30S, R.37E, S5	N/A	
Jawbone-Redrock Fence Cattle Guard #5 5694	T.30S, R.37E, S7	Functional	

N/A = Information not available

APPENDIX 4

TABLES

SPECIAL STATUS SPECIES (FAUNA)
&
WETLAND/RIPARIAN AREAS

Table 4A List of Special Status Species on Rudnick Allotment (Potential and Confirmed) adapted from BLM's (2004) OHV Grant proposal

Common Name	Scientific Name	Habitat	Legal Status	Notes on Surveys and Monitoring
Tehachapi slender salamander	<i>Batrachoseps stebbinsi</i>	moist canyons among live oaks and gray pines (<i>Pinus sabiniana</i>) with rocks or talus; possibly present in the ACEC in higher elevation forests, especially at springs	ST	Potential habitat in upper Jawbone Canyon and at other springs. No surveys exist; surveys scheduled for FY 2003 (not funded by the OHMVR Commission). Likeliest to be found in Boulder or Sage canyons
Kern Plateau slender salamander	<i>Batrachoseps robustus</i>	Lodgepole, pinion pine, gray pines (<i>Pinus sabiniana</i>), big sagebrush, rabbitbrush, with rocks; present in Ninemile Canyon (1), possibly other canyons		Record from upper Nine-mile Canyon and Scodie Mountains to the south of allotment. (Jockusch and Wake, 2002 and Wake et al, 2002) Likely in similar habitat in upper Sand, Short, Grapevine, Five-mile, No-Name canyons, possibly others.
southern rubber boa	<i>Charina bottae</i> ssp. <i>umbratica</i>	higher elevations, rock outcrops, riparian areas; possibly present in the ACEC	ST	Potential habitat; no records of the species in the ACEC. No surveys exist; surveys scheduled for FY 2003 (not funded by the OHMVR Commission).
western pond turtle	<i>Clemmys marmorata</i> ssp. <i>pallida</i>	potentially present on the west slopes of the ACEC, particularly at Kelso Creek	BLM species of concern, CA species of concern	Occurs at the Kern River Preserve and could occur on the west side of the ACEC. No surveys or monitoring are planned.
desert tortoise	<i>Gopherus agassizii</i>	river washes, rocky hillsides, and flat desert having sandy or gravelly soil. Creosote bush (<i>Larrea tridentata</i>), burrobush (<i>Ambrosia dumosa</i>), saltbush (<i>Atriplex</i> spp.), Joshua tree (<i>Yucca brevifolia</i>), and cacti; diverse grasses and forbs essential as food sources, to 4,000 feet elevation	FT ST	Records for lower slopes up to 4,000 feet, including the Kelso Valley on eastside of the ACEC. The ACEC is not federally designated critical habitat. Baseline survey began in FY 2002 for the ACEC; planned conclusion is in FY2003. In FY 2004 and beyond, BLM Ridgecrest will study individual population clusters of desert tortoises in the ACEC and in comparable wilderness sites using monitoring methods recommended by the US Fish and Wildlife Service.
California legless lizard	<i>Anniella pulchra</i> ssp. <i>pulchra</i> and spp. <i>nigra</i>	sparsely vegetated woodland, sandy loam soils of stabilized dunes, and undisturbed desert scrub at the western edge of the Mojave Desert	CA species of concern	Occurs in the western Mojave Desert in the Antelope Valley; may occur in the Jawbone-Butterbredt ACEC. The Ridgecrest BLM is monitoring for all lizard species in pitfall trap arrays in Dove Springs Open OHV Area and in nearby comparable wilderness areas (as control sites).
northern harrier	<i>Circus cyaneus</i>	Migrant and wintering birds use upland habitats with low vegetation (saltbush or creosote scrub), but wintering birds tend to concentrate in agricultural fields.	CA species of special concern 2	Fairly common migrant and uncommon winter resident. Numbers of wintering harriers are small enough that meaningful monitoring is not possible.
sharp-shinned hawk	<i>Accipiter striatus</i>	Does not breed in the ACEC. During migration and in the winter occurs most habitats except bare areas, preferring montane forest, Joshua tree woodland, and riparian areas.	CA species of special concern 3	Uncommon migrant and winter resident. Numbers of wintering sharp-shinned hawks are small enough that meaningful monitoring is not possible.
Cooper's hawk	<i>Accipiter cooperi</i>	Breeding occurs in open montane forests, riparian woodlands, and desert oases.	CA species of special concern 3	Known from Walker Pass in the summer. Small numbers of migrants may supplement year-round resident birds. Aerial and ground searches for nesting

				pairs begins in FY 2004.
Swainson's hawk	<i>Buteo swainsoni</i>	riparian woodland or sparse savannah with tall (usually > 40 feet) oak, cottonwood, walnut, and / or large willow for nesting and adjacent open land such as native grasslands, cereal or alfalfa fields for foraging	ST	Records in Kelso Valley inside the ACEC; potential foraging habitat across the entire ACEC; not known to nest in the ACEC. No surveys exist; no directed survey is planned unless field observations indicate breeding pairs are present in the ACEC.
ferruginous hawk	<i>Buteo regalis</i>	winter habitats are native grasslands and shrub-steppes; human-dominated habitats include pastures and fallow cropland with abundant rodents.	BLM species of concern, CA species of special concern 3	Occurs as a winter visitor or migrant and most numerous in weedy grasslands and agricultural regions. Numbers of wintering ferruginous hawks are small enough that meaningful monitoring is not possible.
golden eagle	<i>Aquila chrysaetos</i>	remote cliff ledges in mountains for nesting; forages widely across all habitats in the Mojave Desert landscape but prefers rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops	BLM sensitive species, CA species of special concern 3	Frequent records during the breeding season but no definite breeding records in recent years. Historical surveys on file at the Ridgecrest FO. Aerial flight survey is planned for FY 2004.
prairie falcon	<i>Falco mexicanus</i>	sheltered cliff ledges, bluffs, or rock outcrops for nesting; perennial desert grasslands and desert shrub lands in the Jawbone-Butterbrecht ACEC, the Rand Mountains, Fremont Valley and elsewhere in the Ridgecrest FO	BLM sensitive species, CA species of special concern 3	Widespread but uncommon at all seasons. Robber's Roost, located in the north part of the ACEC has had up to two pair of nesting falcons (Parker, 1993). Axelson (2000) reported an active prairie falcon aerie in the western part of the ACEC. Historical surveys on file at the Ridgecrest FO; Ridgecrest FO wildlife biologist will survey Robber's Roost in FY 2003. Aerial flight survey planned for FY 2004.
western yellow-billed cuckoo	<i>Coccyzus americanus</i> ssp. <i>occidentalis</i>	Breeding in extensive cotton / willow riparian habitat with large trees, closed canopy, and large tree crown and foliage volume	SE	Known as a migrant in the ACEC along Kelso Creek and possibly elsewhere in the ACEC. Breeds nearby at the Kern River Preserve. No breeding surveys are planned unless birders note breeding pairs in the ACEC.
burrowing owl	<i>Athene cunicularia</i>	open, dry desert grass- and shrubland and in grass, forb and open shrub stages of pinyon-juniper woodland for foraging; nesting and roosting in ground squirrel or other rodent burrows	BLM sensitive species, CA species of special concern 2	Widespread winter migrants to the Ridgecrest FO area supplement resident birds. Breeding pairs are usually on agricultural lands and not known specifically to nest at the ACEC. No surveys exist at present. Once USGS and BLM develop the planned survey method for burrowing owls, BLM will begin monitoring known habitat sites in the ACEC. If a breeding population is found, intensive monitoring of breeding will begin; winter population will be tracked through the winter bird surveys in the ACEC.
long-eared owl	<i>Asio otus</i>	Both breeding and winter habitats often consist of extensive cottonwoods and willows, as well as plantings of exotic species, including tamarisk	CA species of special concern 2	Nesting recorded in the ACEC. BLM Ridgecrest will conduct surveys for nesting pairs in collaboration with the Point Reyes Bird Observatory.
black swift	<i>Cypseloides niger</i>	cliffs behind or adjacent to waterfalls or steep coastal	CA species of special	Closeby breeding occurs in the southern Sierra Nevada (Tulare County) and San Bernardino Mountains. Noted

		cliffs	concern 3	as a migrant elsewhere on BLM lands in the Ridgecrest Field Office area. Breeding is not likely and no monitoring is planned.
Vaux's swift	<i>Chaetura vauxi</i>	Occurs only as a migrant in the ACEC but breeds in the nearby Sierra Nevada	CA species of special concern - addition	No monitoring is planned because swifts are present only as overflight migrants. No breeding is known from high-elevation woodlands in the ACEC.
southwestern willow flycatcher	<i>Empidonax traillii eximius</i>	broad river valleys with lush growth of shrubby willows; dense willow thickets with minimal cattle browsing are required for nesting and roosting	FE CA species of special concern 1	Records in Kelso Creek in the ACEC; no known breeding. Potential suitable habitat is being delineated in FY2003. Breeding could occur in suitable habitat from growth in population at the nearby Kern River Preserve, but most riparian areas are too narrow in width. Previous surveys in 2001 found no nesting willow flycatchers.
vermillion flycatcher	<i>Pyrocephalus rubinus</i>	Breeds in parklands, at golf courses, or in native riparian woodlands with large cottonwoods and willows	CA species of special concern 1	This species breeds sporadically nearby in the city of Ridgecrest and at the Kern River Preserve. No monitoring is planned unless birders find nesting pairs in the ACEC.
brown-capped flycatcher	<i>Myiarchus tyrannulus</i>	Riparian woodland or forest dominated by cottonwoods and willows. In residential areas, the species may nest in planted trees or even telephone poles	CA species of special concern 3	Nests closely at the Kern River Preserve and could nest in appropriate riparian habitat in the ACEC. This species has expanded its range in California to include the Kern River valley over the last 35 years. No monitoring is planned unless birders find nesting pairs.
loggerhead shrike	<i>Lanius ludovicianus</i>	Foraging may occur in all habitats, especially those with open terrain and well-spaced lookout posts. Breeding requires patches of dense vegetation to hide nests.	USFWS Species of concern, CA species of special concern - addition	Winter migrants augment the resident population in the ACEC. BLM Ridgecrest will do nest searches in the ACEC in FY 204 to delineate breeding habitat and monitor habitat and reproductive success.
least Bell's vireo	<i>Vireo belli ssp. pusillus</i>	Nests in willow-dominated riparian zones, including mulefat <i>Baccharis salicifolius</i>	FE SE	Breeds nearby at the Kern River Preserve and could possibly nest in the ACEC if habitat were available. Birds were noted at Butterbrecht Springs in late May 2001. If birders find nesting pairs, BLM will monitor breeding pairs.
gray vireo	<i>Vireo vicinior</i>	Arid slopes dominated by shrubs, but interspersed typically with pinyon, juniper, Joshua-trees	CA species of special concern 2	Historical record of breeding in pinyon-juniper woodland habitat in Walker Pass. BLM will collaborate to conduct a search of suitable habitats for gray vireo in FY 2004.
common raven	<i>Corvus corax</i>	Arid and desert montane lands	BLM Ridgecrest species of concern	This species may be a major predator on desert tortoises. Raven flocks concentrate frequently where refuse accumulates. BLM will monitor OHV recreation sites to detect unnaturally high concentrations of ravens and effects of site clean-ups after big holiday weekends. Desert tortoise surveys document effects of raven-caused mortality for tortoises.
California thrasher	<i>Toxostoma redivivum</i>	Chaparral shrublands and (locally) Mojave Desert shrublands	BLM Ridgecrest species of concern	Found at the northern limit of its range on the eastside of the Sierra Nevada in the westside of the ACEC. Searches for breeding pairs on BLM lands in FY 2004.
LeConte's thrasher	<i>Toxostoma lecontei</i>	desert washes and flats with scattered shrubs, cacti, and a few small trees, including Joshua trees, plus large areas of open, sandy, or alkaline terrain	BLM sensitive species, CA species of special concern 3	Many records on the eastslope of the ACEC. The BLM Ridgecrest Desert Monitoring Team is building a mappable database of sightings from which to initiate a long-term monitoring study. Searches for breeding pairs on BLM lands based on monitoring data to date will begin in FY 2004.

yellow warbler	<i>Dendroica petechia</i>	Nests in riparian forest and woodland with cottonwood and willows	CA species of special concern 2	Often hundreds of yellow warblers migrate daily through Butterbrecht Canyon in the spring, with smaller numbers in the fall. No nesting known from the ACEC. Nests at the nearby Kern River Preserve (500 pairs found in 1997). Monitoring breeding pairs for nesting success will take place if birders find breeding pairs.
yellow-breasted chat	<i>Icteria virens</i>	Nests in riparian forest and woodland with cottonwood and willows. During migration, the species may appear in all vegetation types.	CA species of special concern 2	Nests nearby in the Kern River Preserve (between 50 and 100 pairs annually). If birders find nesting pairs inside the ACEC, monitoring nesting success will begin.
summer tanager	<i>Piranga rubra</i>	Riparian woodland, usually dominated by large cottonwoods and willows.	CA species of special concern 2	As many as 30 to 38 pairs nest at the nearby Kern River Preserve. If birders find nesting pairs inside the ACEC, monitoring nesting success will begin.
tricolored blackbird	<i>Agelaius tricolor</i>	Nests colonially in tule marshes in or near the Central Valley. Winter habitat is usually agricultural fields in mixed-species flocks of other blackbirds.	CA species of special concern - addition	Marsh habitats for nesting do not occur in the ACEC. Some migrant or wintering birds visit irrigated agricultural fields on private lands on the west side of the ACEC. No monitoring is planned.
black-tailed hare (jackrabbit)	<i>Lepus californicus</i>	principally canyon bottoms, alluvial fans, and flats with 0 to 25 percent slope	BLM species of special concern in the ACEC	Widespread species but with populations fluctuating considerably based on available forage vegetation and ultimately on rainfall. Interest in this species reflects concern about the competition of cattle and hares for forage. Monitoring occurs as part of winter and spring bird monitoring in creosote scrub habitats.
Mohave ground squirrel	<i>Spermophilus mohavensis</i>	a diverse mix of shrubs, forbs, and grasses with canopies dominated by creosote (<i>Larrea divaricata</i>), blackbrush (<i>Coleogyne ramosissima</i>), or Joshua tree (<i>Yucca brevifolia</i>) woodland, important food sources are winterfat (<i>Krascheninnikovia lanata</i>) and spiny hopsage (<i>Grayia spinosa</i>): 2,200 to 4,900 feet at (Laabs and Alaback 1991, Leitner 2000)	ST	Trapping records for eastern slopes of the ACEC (1980 to 2002), sight records from western slopes. Professor Phillip Leitner is developing a more complete map of known and potential habitat in FY 2002-2004. Baseline survey with monitoring began in FY 2002 in the Jawbone-Butterbrecht ACEC.
Tehachapi white-eared pocket mouse	<i>Perognathus alticolus</i> ssp. <i>inexpectatus</i>	habitat is poorly described - principally desert annual grasslands and shrublands	BLM sensitive species, CA species of special concern 3	Known from Sand Canyon, about 8 mi E (by rd.) Tehachapi, sec. 28, T32S, R34E, 4080 ft, 3 (CSLB), 1 (MSB). This species may occur in the ACEC. Pitfall traps located in Dove Springs Open OHV Area may serve to monitor this species. No monitoring is planned until a baseline survey occurs (FY 2004).
yellow-eared pocket mouse	<i>Perognathus xanthonotus</i>	found in Joshua tree and pinyon-juniper woodlands, desert shrubland, montane chaparral and sagebrush, and bunchgrass lands between 3,380 and 5,300 feet elevation; know from 6 locales in a limited range between Kelso Valley to Sand Canyon on the interface between the Sierra	BLM sensitive species	Records from the northern part of the ACEC. Overlap of range with routes of OHV travel not known, nor how human land uses such as grazing impact the species. No surveys exist. A survey is scheduled for FY 2004. The species is known from Kelso Valley, Horse Canyon, Sage Canyon, Freeman Canyon, Indian Wells Canyon and Sand Canyon.

		Nevada and Mojave Desert; habitat and meteorological requirements for breeding are not known (Laabs, West Mojave Species Accounts, 1997)		
California leaf-nosed bat	<i>Macrotus californicus</i>	sedentary, non-hibernating; roosting and raising young in caves and abandoned mines with geothermal heating; range and behavior poorly known	BLM sensitive, CA species of special concern 2	No known records. May not depend on riparian habitat. Reconnaissance bat habitat survey began in FY 2002, and species-directed surveys are scheduled for FY 2004 and beyond.
spotted bat	<i>Euderma maculatum</i>	roosts in cliff crevices, habits and habitat preferences not well described; not a colonial species; seasonal migrations elevationally; foraging areas may be 20 miles or more away from roost; diet consists almost entirely of moths	BLM sensitive, CA species of special concern - addition	Very rare: records from Red Rock Canyon State Park only. Potential foraging habitat in riparian habitat is being delineated in FY2003. Reconnaissance bat habitat survey begun in FY 2002, and species-directed surveys are scheduled for FY 2004 and beyond.
pallid bat	<i>Antrozous pallidus</i>	roost in rock crevices, tree cavities, buildings, bridges, and occasionally caves and mines in arid regions; colonial intra- and inter-specifically; food mostly flightless arthropods but may eat lizards, rodents, and even other bats	BLM sensitive, CA species of special concern - addition	No known records. Potential foraging habitat in riparian habitat is being delineated in FY2003. Reconnaissance bat habitat survey begun in FY 2002, and species-directed surveys are scheduled for FY 2004 and beyond.
Townsend's big-eared bat	<i>Plecotus townsendii</i>	forages in arid grasslands and deserts but ranges also into high-elevation forests and meadows; roosting occurs in limestone caves, lava tubes, mine tunnels, buildings, and other human-made structures; hibernates in cool caverns or mines; maternity colonies in warmer portions of caves; non-migratory; feeds on moths; location of preferred habitats in the Mojave Desert poorly known	BLM sensitive, CA species of concern 2	No known records. Potential foraging habitat in riparian habitat is being delineated in FY2003; prone to disturbance - large colonies of female bats may abandon maternity sites after a single visit by people can cause the bats to abandon a roost. Reconnaissance bat habitat survey begun in FY 2002, and species-directed surveys are scheduled for FY 2004 and beyond.
California bighorn sheep	<i>Ovis canadensis ssp. californiana</i>	Open, steep, rocky terrain above the desert floor	FE SE	Not present; the ACEC management plan calls for evaluating the purposefulness of reintroducing bighorn sheep into the ACEC. To date no reintroductions have taken place and none are planned. No monitoring is planned.

Table 4B Ratings and Cover (1- 1.9= poor, 2- 2.9= fair, 3- 3.9=good, 4= excellent)

	Riparian	Soil	Vegetation	Subsurface	Erosion	Apparent	Est.	Average Width
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Name of Spring	Condition Rating	Alteration Rating	bank Protection	Water Status	Process	Water Quality Impacts	Canopy Cover	Rip Zone Woody/ Total (meters)
Axelson Spring (a)	3.9	4	4	3.8	Slight to none	None	86.7%	31.7/36.7
Axelson Spring	3.1	3.25	3.25	2.75	Slight	N/A	72.5%	22.5/ 27.5
Butterbrecht Spring/Canyon	3.37	3.35	3.35	3.4	OHV	N/A	75.5%	26.6/ 34.2
Butterbrecht Spring/Canyon	3.73	3.67	3.78	3.78	OHV	Livestock fecal	25.2%	6.2/ 16.2
Dove Springs Canyon	2	2	2	2	livestock, OHV, bank collapse	Livestock fecal, algae	25%	10/ 30
Dove Springs Canyon	2.62	2.5	2.67	2.67	livestock, OHV, bank collapse	Livestock fecal	53.3%	9.3/ 15
Frog Spring	2.8	2.8	2.67	2.83	livestock	Livestock fecal	78.3%	6.3/ 10.3
Kelso Creek (South of Audubon Prprty)	2.5	2.5	2.5	2.5	livestock, OHV, bank collapse	Livestock fecal	33.8%	40/ 100
Kelso Creek (South of Audubon Prprty)	2.63	2.3	2.5	2.83	livestock, OHV, bank collapse	Livestock fecal	11.7%	8.3/ 48.3
Kelso Creek (Rocky Point)	2.83	2.83	2.67	3	livestock	Livestock fecal	36.7%	36.7/ 75
Kelso Creek (Rocky Point)	3.16	3.17	3.17	3.17	livestock	Livestock fecal	46.7%	33.3/ 51.7
Nudist Spring	4	4	4	4	None	None	87.7	14/ 18.3
Sage Spring	3.2	3.5	3.5	2.5	Livestock, OHV	Livestock	80	25/30
Sage Spring	2.8	3.5	2.5	2.5	Livestock, OHV	Livestock	5	5/25

Table 4C

Name of Spring	Riparian Condition Rating 1993	Mileage (1993)	% (1993)	Mileage (2001)	% (2001)	Riparian Condition Rating 2001	Change from 1993 to 2001
Axelson Spring	ND	ND	--	.15	60	3.9	No Data
Axelson Spring	ND	ND	--	.1	40	3.1	
Dove Spring I	3	.1	16	.3	48	2	Slight improvement
Dove Spring II	2.12	.43	69	.33	52	2.62	
III	2.6	.09	15				
Frog Spring	ND	ND		.1	100	2.8	
Butterbrecht Canyon I	3.3	.32	17	1.31	54	3.37	Moderate improvement

Butterbrecht Canyon II	2.84	.38	20	1.13	46	3.73	
III	3.3	.137	7				
IV	2.3	.04	2				
V	2.39	.93	49				
VI	3.6	.1	5				
Kelso Creek S. I	ND	ND	--	.45	42	2.5	
Kelso Creek S. II	ND	ND	--	.23	22	2.63	
Kelso Creek Rocky Pt. I	ND	ND	--	.13	12	2.83	
Kelso Creek Rocky Pt. II	ND	ND	--	.25	24	3.17	
Nudist Spring I	3.3	.031	100	.05	100	4	Slight improvement
Sage Spring I	ND	ND	--	.05	38	3.5	
Sage Spring II	ND	ND	--	.08	62	3	
Totals		2.558		4.66			

ND= Not Done

APPENDIX 5
LIVESTOCK GRAZING AMENDMENT

SUPPLEMENTAL PROCEDURES FOR LIVESTOCK GRAZING PERMIT/LEASE RENEWALS

A CULTURAL RESOURCES AMENDMENT
TO
THE STATE PROTOCOL AGREEMENT

BETWEEN

CALIFORNIA BUREAU OF LAND MANAGEMENT
AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

The purpose of this amendment is to address the National Historic Preservation Act (NHPA) Section 106 compliance procedures for processing approximately 400 grazing permit/lease (hereafter “permit”) renewals scheduled for 2004 through 2008. This amendment shall cover grazing permit renewals for livestock as defined in 43 CFR 4100.0-5 as “...domestic livestock – cattle, sheep, horses, burros, and goats.” The following procedures will allow for renewal of the permits while maintaining compliance with the NHPA. Alternative approaches to this amendment may be developed by individual Field Offices, but such approaches shall fall under the Section 106 regulations of the NHPA (36 CFR Part 800) and shall require individual Field Office consultation with the SHPO.

These supplemental procedures are an amendment to the State Protocol dated April 6, 1998, which is scheduled for termination on October 25, 2004. These supplemental procedures will remain in effect when that Protocol is terminated and will become an amendment to a successor Protocol document.

This amendment deviates from the Protocol in *Section VI. Thresholds for SHPO Review*, which states, “*BLM shall complete the inventory, evaluation and assessment of effects and document all findings, including negative inventories and no effect determinations, in BLM files before proceeding with project implementation.*” This amendment would allow for renewal of an existing grazing permit prior to completing all NHPA compliance needs as long as Protocol direction, the BLM 8100 Series Manual guidelines (Protocol Amendment F), and the following specific stipulations are followed:

I. Planning

Grazing permit renewals of any acreage size shall be scheduled for cultural resource compliance coverage over the next ten years. Such long term management includes scheduling for inventory, evaluation, treatment, and monitoring, as appropriate. Schedules for inventories of all renewals to be covered by this amendment shall be delineated by each participating Field Office and submitted to the SHPO and the State Office at the first annual reporting cycle for FY 2004.

This amendment shall only apply to the reissuance of grazing permit authorizations and existing range improvements. All new proposed undertakings for range improvements shall follow the established procedures within the Protocol or 36 CFR 800, the implementing regulations for Section 106 of NHPA.

II. Inventory Methodology

To address the impacts of grazing on cultural resources, a Class II sampling or reconnaissance survey strategy shall be devised by the cultural resource specialist in consultation with range staff which focuses inventory efforts on areas where livestock are likely to concentrate within areas of high sensitivity for cultural resource site locations. Congregation areas where it has been shown that the greatest levels of impact are likely to occur are generally around springs, water courses, meadows, and range improvement areas such as troughs and salting areas.

All existing range improvements within areas of high sensitivity for the location of cultural resource sites shall be inventoried. However, due to the fact that cattle trailing occurs along fence lines and the area of impact is limited to a one meter wide swath and impacts to cultural resources are generally restricted to this corridor, existing linear improvements will not be inventoried except in areas of high sensitivity for the location of cultural resource sites.

Salting areas may change from season to season making locating these areas problematic. Salting locations will be assessed by the cultural resource specialist in consultation with range staff and the permittee. The permittee will be asked to provide a map designating salting areas and these locations will be inventoried if they occur in areas where the probability for the occurrence of cultural resources is high. All livestock loading and unloading areas and corral areas will also be inventoried within areas of high sensitivity for the location of cultural resources.

A Class I records search will also be conducted for each allotment to ascertain previously recorded site locations and areas of prior survey coverage which can be accepted as meeting current standards. Sites located within livestock congregation areas will be visited to evaluate grazing impacts.

All areas identified for inventory in the survey strategy shall be covered intensely. All unrecorded site locations will be recorded and a report of findings for each allotment will be completed. These investigations shall only address public lands administered by BLM. Private, state and county holdings will not be evaluated.

III. Tribal and Interested Party Consultation

Field Offices will be responsible for contacting and consulting with Tribes and interested parties as outlined in 36 CFR 800 and the 8120 manual guidelines. This will also meet BLM government-to-government responsibilities for consultation.

IV. Evaluation

Determinations of eligibility to the National Register of Historic Places shall only be undertaken on sites or properties where it can be reasonably ascertained or it is ambiguous that range activities will continue to impact sites and further consultation with SHPO could be required.

V. Effect

A. Range undertakings where historic properties are not affected may be implemented under the Protocol without prior consultation with SHPO. These undertakings shall be documented in the Protocol Annual Report.

B. Range undertakings where historic properties are identified within APEs, and where historic values are likely to be affected or diminished by project activities, require consultation with SHPO, and ACHP if necessary, on a case-by-case basis, pursuant to 36 CFR 800.5-6.

VI. Treatment

Standard Protective Measures can include but are not limited to:

A. Fencing or enclosure of livestock from the cultural resource sufficient to ensure long-term protection, according to the following specifications:

1. the area within the enclosure must be inventoried to locate and record all cultural resources; and
2. the enclosure (i.e.) fence must not divide a cultural resource so that a portion is outside of the fence; and
3. the cultural resource specialist will determine the appropriate buffer to be provided between the cultural resource and its enclosing fence.

B. Relocation of livestock management facilities / improvements at a distance from cultural resources sufficient to ensure their protection from concentrated grazing use.

C. Removal of natural attractants of livestock to a cultural resource when such removal, in the judgment of the cultural resource specialist, will create no disturbance to the cultural resource (e.g. removing vegetation that is providing shade).

D. Removal of the area(s) containing cultural resources from the allotment.

E. Livestock herding away from cultural resource sites.

F. Use salting and/or dust bags or dippers placement as a tool to move concentrations of cattle away from cultural sites.

G. Locating sheep bedding grounds away from known cultural resource sites.

H. Other protective measures established in consultation with and accepted by SHPO.

The Standard Protective Measures defined above may be used to halt or minimize on-going damage to cultural resources. If the standard protection measures can be effectively applied, then no evaluation or further consultation with SHPO on effects will be necessary. The adopted Standard Protective Measures shall be added to grazing permit "Terms and Conditions" as appropriate for each grazing permit issued or reissued as fully processed permits (completed NEPA analysis, consultation, and decision). The "Terms and Conditions" for each permit may be modified by the addition, deletion, or revision of Standard Protective Measures as described in Section VII of these Supplemental Procedures.

VII. Monitoring

A. Field Offices shall adopt the following monitoring guidelines:

1. monitoring shall be conducted yearly and documented to ensure that prescribed treatment measures are effective; and
2. when damaging effects to cultural resources from grazing activities are ambiguous or indeterminate, Field Offices shall conduct monitoring, as necessary, to determine if degrading effects are resulting from grazing activities and if they are continuing to affect the characteristics that may make properties eligible to the NRHP or if they are otherwise adversely affecting the values of cultural resources.

B. When monitoring has yielded sufficient data to make effect determinations, the following apply:

1. When no additional degrading damage will likely occur because standard treatment measures are adequate to prevent further damage from rangeland management activities, SHPO consultation on a case-by-case basis is unnecessary.
2. When no additional degrading damage will likely occur, even without implementation of standard treatment measures, then no further treatment consideration of those resources is necessary, even if past grazing impacts to the ground surface are evident.
3. When additional degrading damage will likely occur, mitigation of adverse effects shall be addressed on a case-by-case basis, pursuant to 36 CFR 800.5-6.

When monitoring results or case-by-case consultation result in a determination concerning addition or deletion of Special Treatment Measure(s) for a specific allotment, then that Measure(s) will be added to, or deleted from, the Terms and Conditions of the fully processed permit for that allotment.

VIII. Disagreements

When a Field Office Cultural Heritage staff and Field Office Manager fail to agree on inventory, evaluation, monitoring, and application of Special Treatment Measures, then the Field Office Manager shall initiate consultation with the SHPO.

IX. Reporting and Amending

A. Each participating Field Office shall report annually to the SHPO and the State Office, a summary of activities carried out under this amendment to the Protocol during the previous fiscal year. The reporting shall be included in the Protocol Annual Report.

B. Annual reports shall summarize activities carried out under this amendment. These reports are not meant to be compilations of the individual project reports prepared for the

range projects; they are meant to be programmatic summaries of data and significant findings.

C. Annual reporting shall include at least three major sections:

1. schedules and status of accomplishments in meeting schedules for cultural resource activities in relation to the range management program as identified in Stipulation I; and
2. results, as annual summaries of accomplishment and significant findings resulting from rangeland management cultural resource activities; and
4. appendices to the report that would include project, coverage and cultural resource location maps and tabular summaries of total number of cultural resources located, new cultural resources located, cultural resources evaluated, types of treatment measures employed at each location, and cultural resources monitored.

D. Annual reports may contain recommendations for new or revised treatment measures.

E. Either party to this agreement may initiate a process to negotiate new or revised treatment measures or to revise the schedule of inventories. When such a process is initiated, the parties to this agreement shall negotiate new or revised treatment measures or schedule of inventories and such revisions or additions shall be issued as Attachments to these Supplemental Procedures.

STATE DIRECTOR, BUREAU OF LAND MANAGEMENT, CALIFORNIA

/s/ james wesley abbott for

By Mike Pool

Date: 8/17/04

STATE HISTORIC PRESERVATION OFFICER, CALIFORNIA

/s/ milford wayne donaldson

By Milford Wayne Donaldson

Date: 8/18/2004

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